



AMERICAN GAS

Association

MONTHLY

DECEMBER 1947

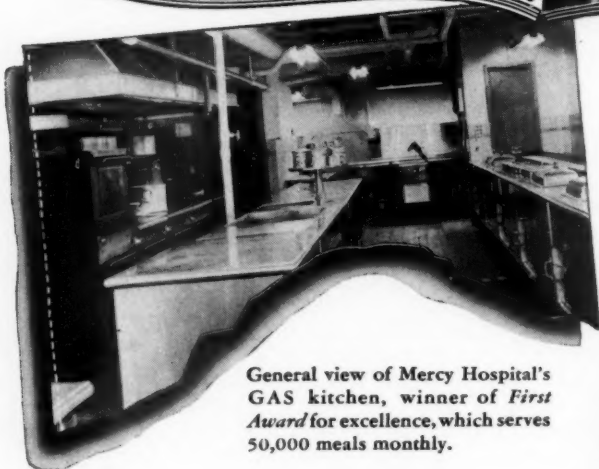
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Award-Winning

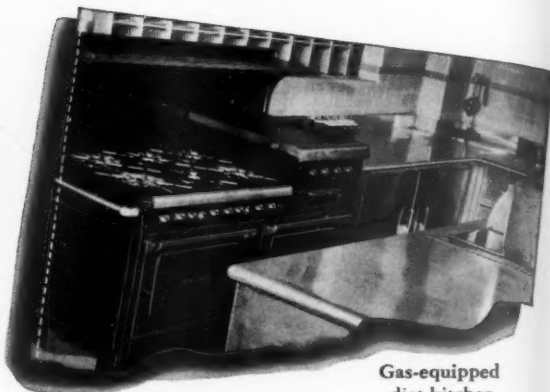
GAS

Kitchen

***Exemplifies
Planned Approach
To Volume Cooking***



General view of Mercy Hospital's GAS kitchen, winner of *First Award* for excellence, which serves 50,000 meals monthly.



Gas-equipped diet kitchen.

Efficient planning for volume cooking operations, and careful equipment selection for rapid food service, are notable features in the kitchens and serving areas of Mercy Hospital, Toledo, Ohio.

In a *First Award* citation to Mercy Hospital for highest standards of food preparation and service, in a recent food service competition, the importance of equipment arrangement and specialized mass feeding facilities was strongly emphasized.

Of course, GAS and modern Gas Equipment are the ever-ready servants at Mercy Hospital. In main and diet kitchens, and in the service areas, you will find these efficient GAS servants:

Roasting Oven

Broiler & Griddle

Toaster

Three Hot Top Ranges

Two Restaurant Ranges

Two Steam Tables

Prior planning is the proved approach to economical, streamlined volume cooking for successful hospital food service. GAS and modern Gas Equipment fulfill every hospital food preparation requirement. Your kitchen consultant or your local Gas Company Representative will assist in selection of the most efficient equipment.

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL
COMMERCIAL COOKING



For the first time the gas industry's Big Three—Promotion, Advertising and Research—are each co-ordinated in theme, timing and appeal. PAR is on the job! . . . This energetic new committee already is creating a united effort to satisfy the public's needs through sound spending, effective action and efficient administration. With great despatch it is planning new means of protecting and improving customer and employee confidence, for confidence the committee knows is a stepstone to progress. . . . Recent events throughout the gas industry such as the final payment for the Big and Little Inch pipelines, opening of the Biggest Inch, continuation of the "Gas Has Got It" campaign, even such seemingly unimportant attention to public interest as Rochester's rhyming street signs, all are helping to build confidence. . . . Another vigorous builder often overlooked during 11 months of the year is Christmas spirit. "It is better to give than to receive," translated into business parlance becomes "the customer is not dependent upon us—we are dependent upon him." . . . There is cause therefore to be doubly thankful this year—thankful for Christmas and thankful for the PAR Plan—your priceless gift from the gas industry. . . . Merry Christmas!

JAMES M. BEALL
EDITOR
JAC A. CUSHMAN
MANAGING EDITOR

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420 LEXINGTON AVE., NEW YORK 17, N.Y.



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PAR Carries the Ball

AN important milestone in the history of the gas industry was passed in October when the first three-year period of the comprehensive Promotion, Advertising and Research Program was completed. At that time the industry placed its stamp of approval on the results by expressing itself overwhelmingly in favor of its continuance and reorganizing its activities in the light of experience gained in the program's operation. It is timely, therefore, to review briefly the background, results and direction of the present program.

When the gas industry recast its thinking and decided to pool its resources in this far-reaching cooperative program, it took inspiration from the recommendation of the Postwar Planning Committee, headed by A. M. Beebe of Rochester. Accordingly, after Paul McKee of Portland, sounded the keynote in 1944, an organization was built within the framework of the American Gas Association and funds were raised to reach the objectives set up by the foremost leaders of the industry.

It fell to the lot of Ernest R. Acker of Poughkeepsie, then president of the Association, to become the spearhead of this unprecedented program. He headed up the committee which raised the funds and administered the operation of the program. His untiring efforts, foresight and recognized integrity have been towers of strength to the program. In a large measure, it is a monument to Mr. Acker's ability to weld diverse elements and various shades of opinion into an effective unified force for progress.

Having adopted a program of cooperative action, the industry's leaders proceeded with dispatch to enlist the services of the finest, most progressive minds in the industry to guide its initial steps. Such men as F. M. Banks, C. R. Bellamy, E. J. Boothby, P. T. Dashiell, H. D. Hancock, D. P. Hartson, D. A. Hulcy, R. L. Manier, E. P. Noppel and C. A. Tattersall, took their places at the head of activities which they were best equipped by experience and training to administer. Approximately \$5 million was raised by subscrip-

tion over the three-year period with which to implement the various activities.

With such men and materials at hand, results were bound to be impressive. Inevitably, the new program has revitalized the gas industry and given it new stature in the eyes of the business world. News of the industry's enlightened, forward-looking activities has filtered into the far corners of the land to places where the industry hitherto has received little attention. We have taken our places beside those who place their faith in cooperative action and the constructive processes of research, advertising and promotion. As a result, a new spirit has pervaded the entire industry and its personnel.

Such intangible or collateral results, however, are not the only entries for the positive side of the ledger. A point-by-point analysis of the PAR program will reveal many specific gains on a broad front. Before reviewing individual activities briefly, it is in order to introduce the new team which took over the reins at the beginning of the fourth year of the program.

Key spot in the new set-up is occupied by Robert A. Hornby, vice-president, Pacific Lighting Corp., San Francisco. Farsighted, able and aggressive, Mr. Hornby is chairman of the Promotion, Advertising and Research Committee (known as the PAR Committee), which succeeds Mr. Acker's Special Committee on Gas Industry Research and Promotional Plan.

Function of the PAR Committee is to review the industry's needs for promotion, advertising and research, decide on the amounts to be raised for such purposes, fix the subscription rates, and administer the fund raised. This committee passes on all budgets for expenditure from the PAR fund and is responsible to the A. G. A. Executive Board and subscribing companies. It is the watch dog to insure sound spending, effective action and efficient administration.

Heading the two major divisions of the PAR program are two men with exceptional experience in conducting coopera-

● Opposite: Completed section of 1,200-mile Biggest Inch pipeline is shown crossing the Colorado River at Blythe on the California-Arizona border (story appears on page 531). Photograph is by Mel Jones, Southern California Gas Co., Los Angeles

tive programs: Hugh H. Cuthrell, vice-president, The Brooklyn Union Gas Co., and recently elected A. G. A. vice-president; and E. P. Noppel, general consultant, Ebasco Services Inc., New York. Mr. Cuthrell is chairman of the General Promotional Planning Committee and Mr. Noppel is chairman of the General Research Planning Committee.

The General Promotional Planning Committee is responsible for the planning of all Association promotional activities on a unified and integrated basis. Thus the planning of cooperative national advertising, publicity, A. G. A. Promotion Bureau activities and promotional phases of the Residential Gas and Industrial and Commercial Gas Sections all fall within the scope of this committee.

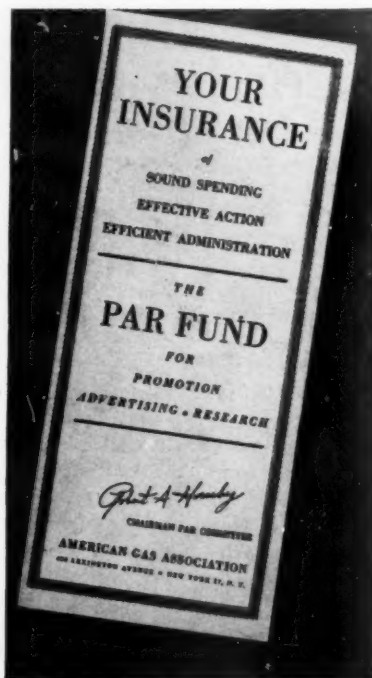
In addition, the General Promotional Planning Committee is responsible for the effective conduct of all such activities as are underwritten from the PAR fund. These include national advertising and special promotional activities of the Association.

Spearheading the promotional activities are: J. J. Quinn, Boston, chairman, National Advertising Committee; R. G. Barnett, Portland, chairman, Publicity and Advertising Committee; C. S. Stackpole, Baltimore, chairman, Residential Gas Section; and Leon Oursuff, Washington, D. C., chairman, Industrial and Commercial Gas Section.

Paralleling the promotional planning activity in its coordinating and supervising function is the work of the General Research Planning Committee under Mr. Noppel. This group previews proposed research budgets and activities, suggests projects, coordinates all research activities and recommends amounts to be spent for a balanced program of research. Operating under this committee are the following com-

mittees: Gas Production Research, Edward G. Boyer, Philadelphia, chairman; Transmission & Distribution Research, H. D. Hancock, New York, chairman; Domestic Gas Research, R. J. Rutherford, Worcester, Mass., chairman; and Industrial and Commercial Gas Research, Ralph L. Manier, Syracuse, chairman.

Each of the committees mentioned above is manned by an imposing group



of industry specialists who are the bulwark of the entire program. Supplementing and augmenting this personnel is a comparatively small but experienced permanent A. G. A. staff and the staffs of supporting advertising, research and

promotional institutions enlisted in the over-all program.

Consistent with the common-sense brass-tacks approach that has characterized the entire program, at the end of the three-year period a reviewing committee was set up to assay, evaluate and decide upon the program's future. The recommendations of this committee, under the chairmanship of F. M. Banks, Los Angeles, were forthright and specific. In a nutshell, the program was found eminently worthwhile and will be continued with some alterations in organization and slight changes in emphasis.

The special reviewing committee set up the guide posts for future action and made four general recommendations:

1. Continue the program on a year-to-year basis.
2. Establish a Committee for Promotion, Advertising and Research each year to determine upon the money required, to raise and administer the funds.
3. Modify the internal organization for more effective cooperation.
4. Provide additional support to the Institute of Gas Technology.

We have already mentioned the continuance of the program and discussed the organization of the PAR Committee. The major recommendation under point three that the Promotional Bureau be discontinued as a special bureau of the Association and be reconstituted as a regular staff unit is now being put into effect. Additional support is being given the Institute of Gas Technology by lending the fund-raising facilities of the PAR group to raise money for a much-needed new building and equipment.

Further delineating the direction of future activities, the special committee recommended (*Continued on page 530*)

HORNBY PAR'S NEW TEAM CAPTAIN

ROBERT A. HORNBY, who recently was appointed to head the gas industry's top PAR Committee, has been active in the utility industry since 1920 when he became associated with Pacific Coast firms following his education in California schools and college.

His first five-year period in the industry included two tours of service with the California Public Utilities Commission. From 1925 to 1930 he advanced from valuation engineer to comptroller of the Southern California Gas

Co., the principal subsidiary of Pacific Lighting Corporation.

Mr. Hornby served as executive engineer of Pacific Lighting Corp. from 1925 to 1930 and from 1937 to date as vice-president. His principal function is to act as liaison officer between the parent and operating companies which serve 1,215,000 customers in central and southern California.

He was active in the initiation of the gas industry's national advertising program in its early stages and has kept in close touch with

it as well as with the research and promotional activities of the American Gas Association and the research work of the Institute of Gas Technology.

Mr. Hornby served in the U.S. Marine Corps in World War I and spent 40 months on active duty in World War II as a staff officer in the Army Air Forces, retiring with the rank of lieutenant colonel. He received the Legion of Merit for outstanding personnel administration work during the war.

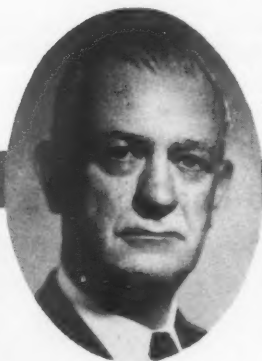
PAR

Varsity lineup



Robert A. Hornby
Chairman, PAR Committee

PROMOTION



Hugh H. Cutbrell
Chairman, General Promotional
Planning Committee

RESEARCH



Edward P. Noppel
Chairman, General Research
Planning Committee



J. J. Quinn
Chairman, National
Advertising Committee



C. S. Stackpole
Chairman, Residential
Gas Section



Leon Ourusoff
Chairman, Industrial and
Commercial Gas Section



R. G. Barnett
Chairman, Publicity
Committee



Edward G. Boyer
Chairman, Gas Production
Research Committee



H. D. Hancock
Chairman, Technical and
Research Committee



R. J. Rutherford
Chairman, Committee on
Domestic Gas Research



Ralph L. Mauier
Chairman, Committee on
Industrial and Commercial
Gas Research

that the results of the gas industry's national public opinion survey serve as an immediate guide in setting promotional objectives, that more attention be paid to exploratory research as contrasted to applied research, and that greater participation of appliance manufacturers be enlisted in advertising and promotional activities. Steps have already been taken to carry out these recommendations.

Now that we have the new line-up and the slightly revised strategy dictated by operating experience, let's look briefly at the record. Have we advanced the PAR ball on the field of progress?

Have we reached or passed any research, advertising or promotional goals? In short, what's the score?

First, it should be understood that this is a long-range program and that results will accumulate at an accelerated pace as it gains momentum. Also, since this is a package plan covering expenditures for a wide variety of activities there are bound to be varying degrees of interest and benefit as between individuals, member companies and organizations.

As a cooperative venture the size of the industry's effort looms large. In fact,

a recent survey by the Association of Trade Association Executives places A. G. A. first on a list of 64 trade associations in volume of such special activities undertaken cooperatively during 1946. However, by comparison with the \$1,200,000,000 annual income of the gas utility industry and the expenditures of other industries—notably our competitors—it is a very modest expenditure.

A high-g geared coordinated promotional campaign on a national level has been one of the most outstanding results of the PAR program to date. While individual cooperative promotional campaigns were conducted by the American Gas Association before the start of the PAR program, no single agency had been set up to initiate, coordinate and integrate special promotional efforts. The promotion bureau which has operated fully staffed at A. G. A. headquarters from 1946 to date not only has provided many new sales tools but also has done invaluable work in augmenting and coordinating the many sales-slanted activities carried on by the Residential Gas Section, the Industrial and Commercial Gas Section, Home Service Department, Publicity and National Advertising Programs.

Not the least of the promotion bureau's accomplishments has been aiding the coordination of promotional efforts of the appliance manufacturers, their national associations, regional associations, local gas companies and allied industries, such as building, banking, hotel and restaurant, metals, soap and others.

One of the most far-reaching initial promotional steps was the conduct of a national public opinion survey to establish a factual foundation for future activities. This survey brought out many favorable factors but also established the fact that large numbers of those vulnerable to other domestic fuels simply did not realize that today's gas appliances have equally satisfactory or better convenience and operating features than those of competing equipment, and have had them for years. Thus an immediate major job was indicated for gas advertising and promotion.

Capitalizing upon the information contained in the survey, the gas industry immediately launched the precedent-shattering (Continued on page 575)

DeLuxe American Gas Range Sent to Princess as Tribute to English Women



Mrs. M. Victor McKay, president of the New York Chapter of Altrusa, with the Town and Country gas range and the hand-painted scroll which were presented to Princess Elizabeth

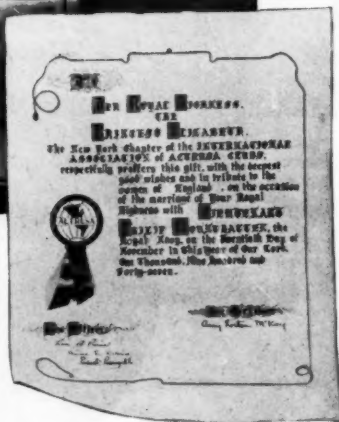
PRINCESS ELIZABETH of England has expressed in a letter her thanks for the luxurious Town and Country gas range presented to her by the New York Chapter of the International Association of Altrusa Clubs, Inc., oldest women's classified service club in this country.

The November 19 issue of *The London Daily Telegraph* and *Morning Post* carried a picture and story of the gift, which was offered as a personal tribute to the women of England for their self-sacrifice during the war and their courage in carrying on in trying postwar years.

The Town and Country model is manufactured by the George D. Roper Corp., Rock-

ford, Ill., and has eight top burners and large center griddle, two ovens, two broilers, a crisping bin and storage drawers. Its extra large size and additional equipment make it especially suitable for large country homes.

The New York Chapter arranged for Mrs. Arthur E. Turner of Harrogate, England, an honorary member of Altrusa, to present a hand-painted scroll to Princess Elizabeth in token of the gift.



Natural Gas Flows Into Biggest Inch

Opening of 1,000-mile section of 1,200-mile artery starts gas pouring into Southern California distribution systems



Officials letting natural gas flow into Biggest Inch pipeline: (left to right) Arthur F. Bridge, president, Southern Counties Gas Co.; Lieutenant Governor Knight of California; LeRoy M. Edwards, vice-president, Pacific Lighting Corp.; F. S. Wade, president, Southern California Gas Co., and Paul Kayser, president, El Paso Natural Gas Company

NATURAL gas from the oil fields of west Texas began pouring into the distribution systems of Southern California gas companies Thursday afternoon, November 13, when Lieutenant Governor Knight opened a great 26-inch valve in Santa Fe Springs at the western terminus of the "Biggest Inch" pipeline.

More than 400 government officials, civic, industrial and business leaders, attended the inaugural ceremony celebrating completion of the major portion of the 1,200-mile, Texas-California pipeline, which is being built at a cost of \$70 million by the El Paso Natural Gas Co., Southern California Gas Co. and Southern Counties Gas Company.

When completed next year the line will be surpassed in length only by the 24-inch "Big Inch" and the 20-inch "Little Big Inch." The 30-inch link from Blythe to Santa Fe Springs is probably the largest high test pipe ever fabricated and laid.

With the laying of an additional 250 miles of line to Dumas, Texas, next year, a practically continuous pipeline will extend from the Atlantic to the Pacific Coasts, and it will be possible theoretically to transport fuel from one coast to the other.

Before the El Paso company built gathering lines into the Permian Basin area of West Texas all the natural gas developed in the production of oil there had to be vented to the air since there were no markets available. The Texas-California artery thus brings about conservation and profitable utilization of a

natural resource which would otherwise be wasted.

The project is the result of long range planning on the part of the companies involved to provide adequate supplies of natural gas to meet the continually expanding needs of the West Coast.

Construction of the 30-inch section from Blythe to Santa Fe Springs was a joint project of Southern California and Southern Counties. This pipeline is 214 miles long and represents an investment in excess of \$16 million.

The completed portion starts at Eunice, New Mexico, and terminates at Santa Fe Springs, Calif., a distance of approximately 1,000 miles.

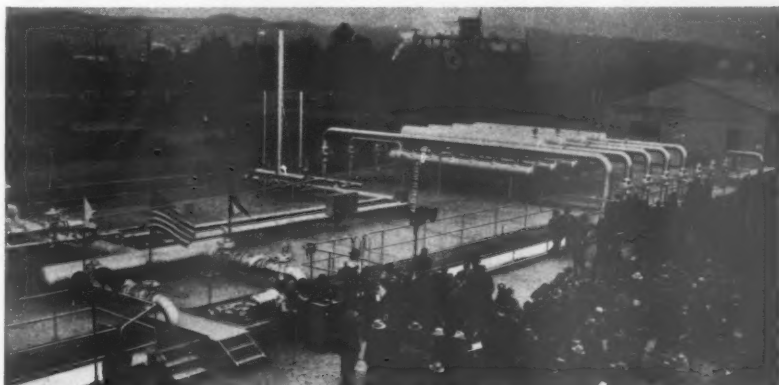
By the first of the year, when the present line is in full operation, gas will be coming into the state at a rate of 175 million cubic feet a day when, as and if it is needed.

By the first of 1949, with completion

of the connection to Dumas, the rate will be stepped up to a maximum of 305 million cubic feet a day, enough in itself to supply most of the normal requirements of Southern California.

The El Paso Natural Gas Co. has entered into a contract with the two Southern California gas companies to supply this amount of gas over a period of 30 years.

Before gas had begun to flow through the line into the state, the gas companies in the Southland had reached an agreement with the Pacific Gas & Electric Co. to release from 50 to 100 million cubic feet of gas a day from San Joaquin Valley sources for use in Northern California. The arrangement solves, for the time being at least, a gas supply problem which has become increasingly more acute in the northern part of the state during recent years.



View of Biggest Inch showing some of more than 400 guests at the dedication ceremony

Women Have Ideas

A veteran newspaperwoman shows how home service can help housewives meet civic and world responsibilities

BY HELEN ROBERTSON

Home Economics Editor,
Cleveland Plain Dealer, Cleveland, Ohio



Helen Robertson

We know them as they come into our offices for the recipes which we dispense and for help on their special problems. We know them as they call by telephone asking for help on home problems, large and small. We know those who call timidly for the first time and those who call so frequently, that we know

THE home service departments of the public utilities and the home economics departments of the newspapers enjoy a peculiarly close relationship with those whom they serve—the homemakers of America.

their voices and sometimes their problems before they state them. We also know them by letter.

Yes, we know whom we serve—the American homemaker—and we must know and understand her for that is part of our job—a very important part of our job.

To be sure, we grow a little impatient sometimes when calls come in too fast, when things are rushed at the office, when someone is particularly peevish and accuses us of wanton waste because a cake does not turn out well or when a recipe has been misread. But for the most part the callers are very nice and appreciative. They are our friends and what a great satisfaction there is when we meet one of them and hear her say, "I feel as if I know you well; I talk to you so often on the telephone," or "I have written to you so many times."

We know that women have ideas and sometimes their ideas are bounded by four walls—what to eat, clothes for the family, activities of the children, and friend husband.

Sometimes their ideas and activities are on a broader scale. These women take an active part in the affairs of

the community—they are civic-minded, good citizens as well as good homemakers. Some women whom we meet have ideas and activities which are misguided and which follow dangerous channels.

We have a very grave responsibility to all three types of women—not only to serve their immediate problems which you home service workers do through lectures and demonstrations and I through a newspaper column, the telephone and by letter. But it is highly important that we widen the boundaries of Mrs. Homemaker whose interests are bounded by four walls. We must assist her in seeing her part in world affairs; we must help her meet the interests of Mrs. Civic-Minded Homemaker, and we must help straighten the thinking of number three whose zeal has carried her astray. It is not only important for their own welfare, but it is important for the life of our country.

We hear often these days that women have a role to play in world affairs and we are apt to become a little immune to it. We must take the lead and show the way, because there is not a minute to lose.

I would refer you to the article—



The home economics column in newspapers and the home service lecture or demonstration both have a grave responsibility to help widen the boundaries of homemakers' interests

Condensation of talk presented at Home Service Round-Table, Oct. 7, during American Gas Association convention in Cleveland, Ohio.

"The Homemaker as A Citizen"—by Mrs. Raymond Sayre, printed in the current issue of the *Journal of Home Economics*, and I quote from it briefly:

"Time was when the individual homemaker believed that by tending to her job she could make her home a little island of goodness. Now she knows that no matter how clean she may keep her own floors the grime and dirt of the community can be tracked in from the outside. She is obliged to take time to do some community housekeeping for the sake of the home itself. We are now citizens of a small and wholly interdependent society. What we do and how we live is conditioned by economic and political events all around the world."

If homemakers are to play their part as citizens, they must look not only to the ways of their household; they must consider how they can play their role as citizens intelligently and effectively. They must accept the responsibility of keeping themselves informed about what is going on; particularly they must learn the economic facts of life. They must understand that in the complex world in which we live today, our choice about what to have for dinner, has economic implications that affect many thousands of people. We need education to help the homemaker think to understand and to decide—and that, I believe is our part in the picture.

In looking back over the past ten or 15 years, it seems to me we can chalk up a number of accomplishments in our teachings on immediate problems. In using "our"—I am referring to all of us who teach as we do, through home service, magazine, radio, newspaper, community classes and lectures and in home economics class rooms. We have done a fairly good job in teaching nutrition. Home menus are now much better planned as we know through menu contests, through correspondence and by general conversation. The menus now include more of the protective foods and not such a predominance of starch.

We have also succeeded in teaching new cooking methods. There is pretty general acceptance of the lower temperature for meat cookery, so often still referred to as the "new method." There are still calls, however, asking if the rib roast (when one has one) should be covered.

Vegetable cookery in the home has

definitely undergone a change for the better, although we are still fighting the long beforehand preparation.

Interest in vitamins is very strong, so strong that sometimes I fear we have made a phobia of them.

We have seen not only acceptance but dependence upon heat-controlled ovens, efficient surface burners, the automatic hot water heater, and modern refrigeration methods, to mention only a few.

Stop and Think

We have taught the care of these pieces of new equipment; we have taught wise buying and seen some good results from it.

The war years brought us good examples—and bad—of the homemaker's thinking. The salvage programs were indicative of the cooperation and the help in national problems that women can give—and also the extent of the indifference of some. We had hoarding on a scandalous scale on the part of some, and meticulous observance and careful management on the part of others.

We have been given a food program. How will we manage and promote it is a question we are asking ourselves.

Those of us who work ahead on holiday pages and the like are regretting some of our beforehand thinking.

Where are we? What are we going to do? This is a time when I think we must use the old rule—when angry, stop and count to ten or 100, or perhaps in this instance it is 500.

We represent as large an audience of women as could ever be assembled in one place. I am referring to the women we reach through our various activities. Isn't it up to us to take the theme of the program, outline practical rules and adopt them to our own audiences and make the program work? To really help effect savings in foods—isn't that our goal? I believe it is, and I believe we should approach it from two angles.

1. The women we reach.

2. In raising our voices in Washington; in asking our government for more and better information and in voicing our opinions. I know that we do not like to take united action and I am not advocating that, but each and every one of us are citizens and we need to practice being good citizens.

Let us remember that the subjects with which we deal are age old in history, in folklore and in human experi-



Home service can play an important part in helping Mrs. Bounded-By-Four-Walls to conquer waste and hoarding and overcome the restrictive influence exerted by high costs

ence. The woman in the home, for all her modern thinking, still carries with her consciously or subconsciously, her background of family food habits, customs and beliefs. Hoarding can be attributed in part to greed but a much kinder explanation is to be found in tradition and history.

It has always been woman's part to provide foods for her family. The greatest compliment to the conscientious homemaker is that she is a good manager.

Many women believed they were managing well by stocking their storerooms in the previous food crisis. The man in the household was and is a cause, for he demands the foods he likes and wants. He, too, must be lined up for cooperation in this program.

We are witnessing the same reactions over and over again. We are seeing the trend of thinking that the welfare of the family comes first and welfare here is interpreted to include likes and dislikes of the family—fulfillment of the family's food and eating habits.

Mrs. Bounded-By-Four-Walls will follow this trend of thinking. Mrs. Civic-Minded will try to cooperate, but she will certainly voice the opinion or opinions that she has not been wasting foods; that costs have been too high for that; and she will see costs cannot come down materially as a result of the conservation program, not if it means that heavy shipments are continued abroad. Certainly they must be figured in the scheme of things. Mrs. Misguided will say that the program is all in the interests of "big business" and for profit. She will do much shouting and give no cooperation.

We have counted to ten and where are we?

First, we must be informed on conditions; we must see the large overall picture, particularly the economic conditions. We must recognize the inflationary measures that are operating. We must understand the woman's viewpoint. That is our job. We must plan our teachings and our writings as we

have never done before. We must dramatize them as we have never done before.

Having outlined a plan to help in the conservation program, we must teach its importance and the necessity for it. We must help the woman to see that it is not the government alone that is doing the shipping, but she herself in taxes that she pays, in supplies which she releases. We must aid her to see her obligation.

We should help to make her a better informed and a more considerate consumer. Women are blaming retailers for high prices; they are blaming manufacturers. We must help counteract that and put particular stress on appreciation of the American way of life; in short, an appreciation of what free enterprise and business has done for the woman in the American home.

You and I know it, or certainly should know it, and we must do more preaching about it. We must put it in language Mrs. Four-Walls can understand. She will appreciate it for she is hearing too much on the depreciating side. It may help awaken her to her privileges and responsibilities. Mrs. Civic-Minded will like hearing it. Mrs. Misguided will probably scoff at it. I doubt if there is any way to pierce her shell but at least we can try. We can keep down her list of converts and how much good you can do—you who are directing so many of your activities to the teen age group.

Last week I sat in on some of the Congressional price hearings. I attended the morning session when the representative of the Consumers' League, National Shoppers Association and others talked. Their talks were convincing. They had figures to show the prices of meats and groceries during price controls and rationing and now; that the meats which they were pricing during controls were not available, meant nothing to them. They were for controls, against monopolies, against big business and against things American. You and I must do everything in our power to counteract that. We must be as smart showmen as they are.

I sat in that audience practically alone. Other groups had the same feeling—down with big business, down with everything that is American. It would make your (Continued on page 569)

Rochester's Signs Pay Dividends

ROCHESTER Gas and Electric Co. has found that humor pays dividends in better public acceptance of traffic delays due to utility line construction.

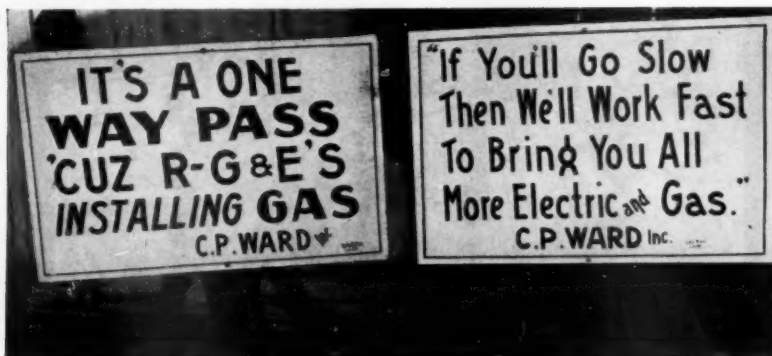
New gas mains and electric conduits necessitated excavations in several principal streets and the utility was concerned about the possible public relations effect due to traffic slowdowns. The usual courteous signs "Sorrying to inconvenience you; we'll speed up the work of improving your electric and gas service," were well-accepted.

C. P. Ward, general contractor in charge of the street construction jobs, however, wanted to try a little humor and the company

gave him the "go" signal. Mr. Ward offered prizes of \$10 to \$25 for the best rhymes to place on signs near highway obstructions and his boys went to work. To date he has paid off on nearly 100 suggestions.

The rhymes would probably make a long-haired poet tear out his locks but they made an immediate hit with the public. Motorists slowed down, read the messages and grinned, rather than damning both utility and contractor for the delay.

According to Mr. Ward, the campaign has paid off in better public relations for both utility and contractor and nearly a 70 percent drop in public liability claims.



A touch of humor in these street construction signs used by Rochester Gas and Electric Co. has paid handsomely in better public relations for both utility and contractor



Utility's attractive reception area at Home Show Exposition in Washington, D. C., contained comfortable seating, drinking water and friendly hostess service for visitors

Gas plays major role in Modern Living

A LARGE exhibit of the Washington Gas Light Co., covering several thousand square feet of floor space at the recent Home Show Exposition in Washington, D. C., helped to graphically portray the vital role which gas plays in modern living. The show was one of 37 similar events in metropolitan

centers this year.

Part of the utility's space was subsequently leased to representative appliance manufacturers and other allies. In addition to utilizing its own directly controlled space for the promotion of gas equipment, the Washington company, through its trade contact representatives and with the help of appliance manufacturers was able to favorably influence a large number of exhibitors. The result was that gas overwhelmingly predominated among building supply houses, plumbing and heating contractors, kitchen cabinet concerns and appliance dealers. Gas ranges outnumbered their nearest competitor three to one.

High spots in the gas company sector included full-scale model kitchens with complete single-wall apartment assembly which featured a combination sink

and cooker. A model laundry with clothes dryer was also shown.

Other features were a battery of 12 miniature kitchens in a striking arrangement and a presentation of the "Gas Has Got It" theme by projection of the American Gas Association film "Winning Seals of Approval."

The two (Continued on page 562)



(Below) Some of the numerous booths equipped and manned by individual sponsors. (At right) Full-scale New Freedom Gas Kitchens and a New Freedom Gas Laundry were high spots



Cooperative Range Campaign Pays Off

A G. A. and industry receive profitable return on advertising investment by joining forces to sell new automatic gas range

BY ROY ALDERMAN

Vice-President and Service Group Head,
McCann-Erickson, Inc.

● There are several unique aspects to the current A. G. A. national advertising campaign on gas ranges. One is that it is a campaign directed by a trade association in which appliances are advertised by their specific brand names. Other aspects are described by Mr. Alderman, whose agency serves the account.

GENERALLY speaking, "association" advertising is intended to do something that cannot be done by its individual members—or to do better (as in the sense of acting on a larger scale) something which association members are not doing effectively as individuals. Like all statements of principle, that is easier to say than carry out.

Above is one of the initial full-page advertisements in the new series, which appeared in the October 18 Saturday Evening Post

Reprinted from October Advertising & Selling.

The determination of advertising objectives of any association is never too simple and, with the American Gas Association, there are some peculiar complexities and diversity of interests which *should* make concerted action impossible—but actually do not. American Gas is an association primarily of gas utility companies and their personnel. The gas appliances and equipment people have a separate organization.

Yet A. G. A., selling gas, sells it best by showing gas appliances in use. Some of the large gas utilities also make and sell electricity—and must have some division of allegiance between these two competing fuels.

Each utility is completely local in scope and might well have less than a national point of view. Some are users of natural gas, others of manufactured or of mixed gas. Climatic differences cause differences in sales problems.

Despite these and other dissimilar factors, there is an amazing degree of agreement on American Gas objectives—and vigorous pursuit of them. In 1936, before the first national advertising campaign was launched, they undertook a survey of consumer attitudes. This helped to compromise local and sectional points of view within the industry, prevented the delays and selection of wrong targets which otherwise might have occurred, and was the basis of a three-year campaign.

Again in 1940, although improved sales results had been noted, the progress of the industry's promotional campaign was again checked by a study of consumer opinions. In a majority of the points covered, on which the public's attitude toward gas was negative in 1937, a reversal of attitude had occurred by 1940.

In addition, it told the industry in what respects appliances and services should be improved, and gave the As-

This advertisement from 1941 November McCann-Erickson gave individualized treatment to the automatic features of today's latest models

sociation and its advertising agency a reliable guide to the points to be stressed in national advertising.

In 1941, the last year before the war interrupted the progress of this and all similar promotions, the gas industry enjoyed the largest year's sales of gas ranges in its history, more than two million (1947 may exceed this).

The hiatus caused by the war made impractical consumer-opinion studies of the same scope as the 1937 and 1940 efforts, but consumer research was maintained on a scale sufficient to provide reliable temporary guidance.

By means of research, and with the close cooperation of the several committees with which the advertising agency



works, the situation in 1944 was recognized to be thus:

• The war's end could be foreseen, probably within the next calendar year, and it was felt that not less than a year—possibly two years—would elapse before gas, and competitive appliances, could be in full production.

• Within that period, there was a special opportunity to sell the public on the postwar usage of gas.

- However, postwar models of gas appliances were not available and prewar models were in short supply. It would not be possible to promise deliveries.
- At the same time, it was realized that millions of gas appliances in use were four to five years older than normal and were not giving satisfactory service. Also, most ranges produced during the war were stripped-down Victory models.
- Finally, the fact had to be faced that electricity or electronics had made vast advances in the public's mind during the war. Everything had conspired to create the assumption that electricity was a modern, glamorous way to do everything—from shaving you in the



morning to keeping you warm at night with an electric blanket. Gas would suffer radically from this assumption unless it could be made an exception to this general trend of thinking.

In view of all this, in January, 1945 the three more important gas appliances or gas services were combined in a new advertising program—the procedure being to illustrate the most modern and attractive kitchens, naming them New Freedom Gas Kitchens, and pointing out that the essentials of a well-designed kitchen were an automatic gas range, an automatic gas refrigerator, and hot water supplied automatically by gas. The difficulty of not having specific ranges to offer was overcome by designing a composite range which served the purpose of the advertisements and did not embarrass any one range manufacturer.

Despite the fact that the electric industry does about five times as much advertising as the gas industry, this New Freedom Gas Kitchen campaign has for nearly three years consistently secured observation and readership ratings as good or better than the advertisements of electric appliances.

As tangible evidence that this cam-

paign largely achieved its objectives is the fact that sale of gas ranges in 1946 was 1,800,000, and could have been larger but for numerous delays which hampered production. All other gas appliances were in short supply, also.

At the war's end, it was realized that revolutionary changes had occurred in buying trends, so client and agency laid plans for a full-scale nation-wide survey, results of which were made available early in 1947. Again, as in 1937 and in 1940, very considerable advances were reported in the attitude of the public toward gas. In fact, the acceptance of gas for certain purposes was so strong that, for the time being, it would be inadvisable to advertise these uses, as the industry would be unable to supply the equipment or the gas service.

This in turn released the energy of the gas industry to concentrate on the most highly competitive problem facing it, that of getting women to understand that, despite the old gas ranges *they are using*, the modern automatic gas

range has everything they could ask for.

Gas ranges of good quality and equipped with modern automatic control devices had not been available in quantity since 1941. In fact, prior to 1941, for some years, it is doubtful that more than a small percentage of the gas ranges sold were of a quality at all comparable with today's greatly improved models. So, nearly a whole generation of new housewives had had no opportunity to get a good idea of gas cookery from personal experience.

As the result, the consumer study revealed that:

- Women were woefully ignorant of the merits of the automatic gas ranges currently available.
- The time remaining to correct this ignorance or misunderstanding was alarmingly short as the big shopping period for ranges had begun.
- National advertising of gas for the immediate future must have one aim, overriding all others, to convert great masses of women (and men, of course)

Gas companies and dealers in their newspaper advertising use the same slogans and themes which appear in national magazine ads, thus localizing the impact of the campaign

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Gas has got it!
You can't get better, better, better than this really new!
You can't get better, better, better than this really new!
You can't get better, better, better than this really new!

ALABAMA GAS COMPANY
GAS HAS GOT IT!

There is a King in COOKING
it's a new GAS range

GAS has got it!
Automatic Controls...
Smokeless Broiling...
easier, faster, cleaner Cooking

GAS Has Got It!
TAPPA...
GAS RANGE that is really NEW

EDWARDS FURNITURE CO.
5th Ave. At Oak

ALABAMA GAS COMPANY
GAS HAS GOT IT!

Public Service Electric and Gas Company

Gas companies and dealers in their newspaper advertising use the same slogans and themes which appear in national magazine ads, thus localizing the impact of the campaign

to the fact that today's automatic gas ranges are really NEW in contrast to those they know by experience.

• Everything in the situation demanded that such advertisements, physically, be of such directness and force that no observer of them could escape the *knowledge* and *conviction* that gas ranges are NEW.

The agency recommended the discontinuance, at least temporarily, of all other national advertising in favor of an intensive black-and-white magazine campaign of pages and half-pages during the four months of September, October, November, and December, 1947, with all the space to be devoted to (1) the showing of actual automatic gas ranges built to "CP" standards and (2) in each advertisement *naming the brand* that is shown in the main illustration.

For this purpose, in this initial four-months' phase alone, \$200,000 will be spent by the American Gas Association. However, that is only the beginning. This proposition has been widely accepted by many of the gas utilities themselves as the idea they will push in their local advertising not only this fall, but also during the next year. So many are planning to use either exact reproductions of the national ads or, at least, the same themes and copy arguments, that it is estimated that they will spend up to

\$800,000 of their own money locally this fall, in support of this national drive to tell women that "GAS Has Got It."

Moreover, the automatic gas ranges which are being pictured and named in American Gas Association national ads will be allotted space in the A. G. A. campaign in direct proportion to the money spent by the range makers in their own national or regional advertising. They also must pledge themselves to utilize, in *their* advertising, the nine basic selling points determined by A. G. A.'s consumer study.

This limits the number of ranges featured in the campaign to 13 at this date, and will result in increased pressure and sale on the finest type of ranges only—ranges that will compete successfully with automatic ranges of any kind. The effect is to up-grade the ranges produced and sold by the gas industry. This is an essential part of the campaign, because, in these days, it is too easy to sell inferior ranges, and unless better ranges are sold now, the gas industry will pay the bill a few years later in lost markets.

Some of the increased advertising by gas range manufacturers will appear this year, but most of it will come in the year 1948. It is expected that, as a result of this cooperative campaign, the gas range manufacturers will *increase* their own national advertising by about

\$600,000, not counting the value of increased sales promotional effort. At the same time it can be expected that the local utilities will continue their efforts.

For a 12-month period, beginning this October, the estimated expenditures in the "Gas-Has-Got-It" campaign are:

| | |
|---|-------------|
| American Gas Association | \$ 700,000 |
| Local advertising of utility companies | 2,100,000 |
| Advertising of automatic gas range makers | 1,400,000 |
| Total | \$4,200,000 |

Measured only in terms of advertising pressure, it is therefore seen that the A. G. A. national campaign which starts this fall will actually result in the utilities and the gas-range people spending \$5 or more on the A. G. A. national advertising theme for every dollar that A. G. A. spends itself.

Unified Objective

That is not the total measurement, because now that the industry is unified on one objective for the first time in its history, it means that sales-training efforts are being directed toward this same objective—the sales promotional effort of the automatic-gas-range manufacturers is devoted to this same idea, etc.

So once again, as the twelfth year of American Gas national advertising opens, the industry finds itself still on the straight path, moving ahead at a very rapid rate, and doing an excellent competitive job by anticipating its problems and turning all its promotional energy toward their solution.

As a matter of fact, the experts who forecast years ago a tough time ahead for the industry must be slightly embarrassed when faced with the following data (based on urban and suburban domestic use only):

| | Customers | Sales (Mcf) | Revenue |
|------|------------|-------------|---------------|
| 1936 | 15,235,000 | 582,898,000 | \$522,110,000 |
| 1946 | 19,245,700 | 980,638,000 | 761,273,800 |

The 11-year increment is 26 percent more customers, 68 percent more sales, 46 percent more revenue. If rural homes are included, the 11-year increase in number of homes using gas is more than seven million homes, or 46 percent increase.

Attention Gas Industry Photographers!

● The MONTHLY announces its 1948 *frontispiece illustration contest* open to photographers who are members of the Association or who are employed by member companies.

● Prizes are ten dollars for each photograph selected for publication as a frontispiece illustration in the MONTHLY. Photographs will be selected principally for their pictorial excellence but *must* be related to the gas industry. Artistic expression of gas industry operations and the personal element are desired.

● Contestants preferably should submit glossy black and white prints not less than eight inches by ten inches, unmounted. Vertical rather than horizontal pictures are preferred although not required. Please look at past frontispieces in the MONTHLY for general style before taking pictures.

● Photographs which have appeared in other publications will not be accepted but no restriction will be placed on the use of entries following appearance in the MONTHLY.

● It is suggested that company camera clubs or other photographic groups consider the possibility of sponsoring local "print nights," with the winning prints being submitted as above described.

● Please send all photographs to: American Gas Association MONTHLY, 420 Lexington Ave., New York 17, N. Y. Be sure to exercise care in wrapping so that pictures will not be bent or otherwise marred.

Miss Flame Adds Zest to Gas Industry Promotion



THE gas industry has adopted a "pin-up" girl. "Miss Flame," the attractive little character illustrated on this page, is now being shown throughout the country adding color and zest to gas industry advertising, displays and promotional material. Sixty-three gas utilities have already subscribed to the "Miss Flame" monthly service supplied by the American Gas Association.

Developed and copyrighted by the Association, "Miss Flame" made her debut recently in "The History of Gas," the first of a series of four-color picture story books.

The Association is now offering a monthly service of two sheets of mats containing a total of 12 different poses in two sizes of "Miss Flame" both with and without gas appliances. While most of the poses show "Miss Flame" with an automatic gas range built to "CP" standards, she will be portrayed with other gas appliances and in other poses in subsequent issues.

Artwork and mats of the first issue were designed primarily for use in local gas utility newspaper advertising but are readily adaptable to many types of advertising, including direct mail, billboard, truck signs, display and novelty presentations. A complete service will soon be made available by the Association.

Actual cost of the artwork, engravings, mats and printing are prorated among the number of companies subscribing to the service. Present prices are: art service only—two sets of proof each month at \$12 monthly; mat service—two sets of proof sheets and one full set of mats monthly at \$15.50. Additional sets of mats are available at \$3.00 per set. Orders should be addressed to Promotional Bureau, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.



Fuels for Today and Tomorrow

Price relationships, preferences and areas of regulation analyzed for their effect upon the next five years' fuel outlook

BY MAX W. BALL

Director, Oil and Gas Division,
U. S. Department of the Interior,
Washington, D. C.



Max W. Ball

THE fuel outlook for the next five years, barring war on the one hand and a substantial recession on the other, appears to add up to this: Natural gas will be in adequate supply in an increasing number of areas,

but not to large areas now unserved that want it and need it and probably not in all areas now being served. Coal will probably be tight through the early part of the period but may become easier toward the end of it, much depending on the quantity that must be exported. Fuel oils will probably be in tight supply throughout the period.

The American economy and the American householder will probably not suffer disastrously for lack of fuel during these next few years, but some industries and some householders will suffer at times and a large segment of our people, to keep adequately fueled, will have to be vigilant in procurement and careful in use.

Extract of paper presented at A. G. A. Natural Gas Department meeting, October 7, during Cleveland convention.

Looking still farther into the future, I should like to suggest some thoughts on the relationship of supply, demand, and price, as among the three fuels, and their possible effects.

The prices of coal, fuel oil, and gas have not kept step, as you all know. To get an idea of changing relationships I have taken three Middle Western cities, not too close to sources of supply of any of the three fuels, namely Minneapolis, Des Moines and Detroit. For comparative purposes I have taken high-volatile eastern coal with a fuel value of 13,300 B.t.u.'s per pound, No. 2 fuel oil at 140,000 B.t.u.'s per gallon, and house heating gas converted to a 1,000 B.t.u. basis.*

From June 15, 1944, to June 15, 1947, the average coal price in the three cities went up 16.4 percent, the average heating oil price went up 30.4 percent, and the average gas price went down 11 percent.

These changes do not bring parity in the cost per heat content. At the 1947 prices the cost per one million B.t.u.'s is 50 cents for coal, 61 cents for gas, and 74 cents for heating oil. The cost per heat unit for gas and oil, on these figures, is materially higher than that for coal.

The gas cost I have used, however, is for almost the highest-priced use, that for residential heating. Much industrial gas is sold for 20 and 25 cents per Mcf instead of 61 cents; some is sold for even less. Coal and oil for industrial use command no comparable discount below prices for house heating use. If we had the average prices of all sales of the three fuels in the three cities, we might well find gas the cheapest per B.t.u.

Comparisons

If we had the figures on comparative increases in consumption for the three fuels, we should undoubtedly find that percentagewise the increase in consumption of oil and gas has been materially greater than that of coal. It is safe to say, moreover, that if all three fuels were in free supply with no restrictions as to installations and use and with pres-

* Coal and oil prices and cost per million B.t.u.'s for gas for the three cities were taken from reports of the Bureau of Labor Statistics. Gas prices are from Brown's Directory for 1944 and the A. G. A. Rate Book for 1947, taken from the step starting with 4 Mcf of the residential rate. These were averaged arithmetically, without weighting, by the author.

ent price relationships, gas consumption would have increased by the greatest percentage of the three. This would be the case not only in the Middle West but virtually everywhere in the United States, given the same or similar price relationships.

We are not wholly dependent on speculation in the matter. In 1945, *Fueloil and Oil Heat* conducted a sampling survey of fuel preferences in 20 cities in New England, the Middle Atlantic States, the Middle West, and the Pacific Northwest. The survey showed that four times as many people as now use gas would like to use it, compared to less than 1½ for oil, and that only one-third of those who now use coal prefer it to oil or gas.

Price is not the only factor in fuel preference, of course. A great many people who now use coal would use gas if they could get it, even though it cost materially more. You know all the arguments for gas over coal regardless of cost. You see them effectively on your prospective house heating customers—or you did when you had the gas to sell them.

Money Talks

You have found these arguments less than effective with prospective commercial and industrial customers, however. To them you have had to talk dollars and cents, and the dollars and cents you get from commercial and industrial consumers are important parts of your incomes. It is not gas men who make the mistake of thinking exclusively in terms of house heating.

Neither do gas men make the mistake of thinking that house heating demand is independent of comparative costs. They will not be surprised that, in the *Fueloil and Oil Heat* survey, 56 percent of those who preferred some other fuel to gas gave as their reason that gas is too expensive.

The demand for gas is no different from that for any other commodity. Various factors affect it—convenience, cleanliness and others—but the basic factor is comparative cost.

The increasing demand for gas of the past few years, then, and the pent-up demand that would be released if gas were fully (Continued on page 573)

Special Burners

In Water Heaters

Fig. 1. Flames from non-aerated burner B twist through 90 degrees to form a thin flat sheet

THOUGH provoking data on experimental gas burners of unusual design when applied to water heaters are presented in a new research bulletin of the American Gas Association Testing Laboratories.

Widespread use of non-aerated burners in England and recent advances in design knowledge here have crystallized interest in the possibilities of both non-aerated and totally aerated types as well as special designs of partially aerated burners. These possibilities are probed in Research Bulletin No. 45, "Research in Special Types of Burners for Flames Adaptable to Gas Water Heaters," which was recently published and distributed to the industry. It presents results of an investigation sponsored by the A. G. A. Committee on Domestic Gas Research and supervised by the Technical Advisory Group for Gas Water Heating Research.

Basic for the study was the application of a number of burners of unusual design to two 30-gallon underfired automatic storage water heaters of conventional design along with a partially

aerated, drilled port, reference burner which also represented the original design for both heaters. One of the heaters was of the external and the other of the internal flue type.

Capitalizing on design information on non-aerated and totally aerated burners gained in former burner studies, two types of non-aerated burners and one totally aerated experimental model were constructed during the course of the investigation. They appeared to have excellent possibilities of practical application within certain limitations. The non-aerated types were of advanced design in that they were of the blue flame type.

As the objective of the work was to determine for the gas industry possibilities of such applications, the scope of the investigation was limited to probing basic concepts. Consequently no attempts were made to improve designs of the burners or to establish optimum engineering conditions for the heaters employed. Thus the ultimate design of burners for particular applications was left for manufacturers and designers.

Within the limits of the study, ribbon port, circular slotted port, and jet port partially aerated burners were found adaptable for application to contemporary type heaters with performance characteristics similar to those of conventional drilled port design. The blue flame non-aerated experimental burners appeared adaptable for limited application to contemporary heaters. The flame of one of these burners is shown in Fig. 1.

The totally aerated experimental burner not only appeared adaptable to such heaters but showed capabilities of providing improvement in service efficiency and standby loss. Sketches of both types of burners are shown as Figures 2, 3 and 4. They are identified as burners B, D and G in Table 1.

Burner B (Fig. 2), a non-aerated blue flame manufactured gas burner, gave completely satisfactory performance in the internal flue heater but appeared to be inadequately aerated under installation conditions in the external flue heater. Gas issues from vertical slotted ports and twists through 90 degrees so that a thin flat sheet of flame is formed in the shape of a maple leaf. The thinness of this sheet makes it possible for secondary air to combine readily with the gas to complete the combustion reaction.

Burner D (Fig. 3), a non-aerated drilled port natural gas burner equipped with a target or flame spreader, operated satisfactorily in the external flue heater. Indications are that with proper application it could be employed in both type water heaters insofar as acceptable combustion is concerned.

Advantages

Inherent advantages of non-aerated burners include the achievement of ultimate compactness in size and weight, freedom from possible service difficulties due to poor adjustment or partial stoppage of primary air openings and freedom from flashback and burner turnaround difficulties.

Disadvantages include the possible necessity of using a gas filter to prevent clogging of ports, the need of careful precision construction, possible difficulties due to pyrolysis and the need of overcoming blowing or lifting resulting from the combustion of slow burning gases. The latter tendency is usually

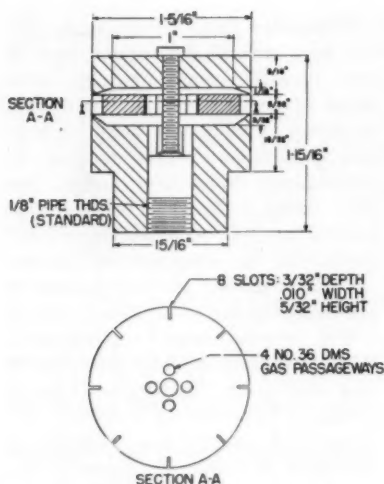


Fig. 2. Sketch of non-aerated slotted port manufactured gas burner B used in testing

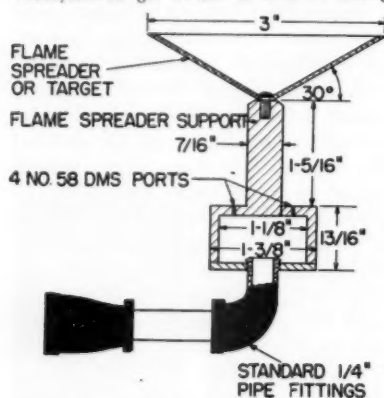


Fig. 3. Non-aerated drilled port natural gas burner D for research on special burner types for flames adaptable to gas water heaters

overcome by the use of targets or flame spreaders.

Burner G (Fig. 4), a totally aerated double port burner, was installed in the external flue heater and operated on both natural and manufactured gas with completely satisfactory combustion performance with all secondary air openings sealed. Although it appeared that similar results could have been obtained in the internal flue heater, this particular burner was too large to install conveniently in this heater.

Major advantage of this type of

burner is that it permits elimination of all secondary air openings in combustion chamber construction and of reducing stack losses to a minimum during stand-by periods. Disadvantages include the necessity of providing a suitable pilot or source of ignition which can be operated either without secondary air or with a minimum supply, unusual bulkiness, limited turndown characteristics, the necessity of careful design to overcome flashback propensities when using fast (Continued on page 573)

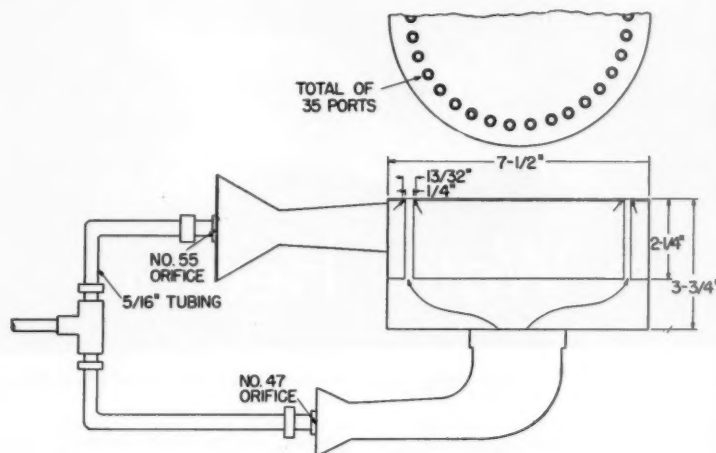


Fig. 4. Sketch of totally aerated burner G used in Testing Laboratories' research on special types of burners for flames adaptable to gas water heaters

TABLE 1—COMBUSTION CHARACTERISTICS* OBSERVED WITH BURNERS INSTALLED AND OPERATED IN AUTOMATIC UNDERFIRE STORAGE WATER HEATERS

| Burner | Type | Internal Flue Heater | | | | External Flue Heater | | | |
|--------|--------------------------------------|---|---------------------------|-----------|--|---|---------------------------|-----------|--|
| | | Vertical Distance From Outer Ports to Tank Bottom | Input Rate B.t.u. per Hr. | | Combustion | Vertical Distance From Outer Ports to Tank Bottom | Input Rate B.t.u. per Hr. | | Combustion |
| | | | Nat. | Mfd. | | | Nat. | Mfd. | |
| A | Partially Aerated Drilled Port | 4 1/4 in. | 20,150 | 19,200 | Satisfactory | 4 1/4 in. | 23,850 | 25,300 | Satisfactory |
| B | Non-Aerated Slotted Port | 2 1/4 in. | Mfd. Only | 19,700 | Satisfactory | 2 1/4 in. 3 1/2 in. | Mfd. Only | 19,900 | Unsatisfactory at 1/2 normal and normal pres., mfd. gas, with 2 1/4 in. distance. Unsatisfactory at all pres. with 3 1/2 in. distance. |
| C | Partially Aerated Slotted Port | 3 1/4 in. | 22,650 | 22,950 | Critical at normal and 1 1/2 normal pressure, natural gas | 4 | 25,200 | 23,500 | Satisfactory |
| D | Non-Aerated Drilled Port With Target | 3 1/2 in. | 24,100 | Nat. Only | Unsatisfactory at normal and 1 1/2 normal pressure, natural gas. | 6 3/4 in. | 23,500 | Nat. Only | Satisfactory |
| E | Partially Aerated Jet Port | 4 1/2 in. | 21,650 | 20,750 | Critical at normal pressure, manufactured gas. | 5 1/2 in. | 23,350 | 26,400 | Critical at normal and 1/2 normal pressure, natural gas. |
| F | Partially Aerated Ribbon Port | 3 | 21,250 | 20,350 | Satisfactory | 4 | 23,900 | 24,700 | Satisfactory |
| G† | Totally Aerated Double Port | Not Installed | — | — | Burner was too large to install in existing combustion chamber. | 3 1/4 in. | 19,500 | 18,500 | Satisfactory |

*Combustion studies were conducted at 1/2 normal, normal, and 1 1/2 normal pressure on both natural (7.0 in. normal) and manufactured (6.0 in. normal) gases. Except as noted in the table combustion was satisfactory at all pressures.
†All secondary air openings were sealed.

Solving the House Heating Problem

Consumer satisfaction must be increased to gain the confidence of investors who in turn can provide funds to assure continued expansion of gas industry facilities

BY ROBERT E. GINNA

Vice-President, Rochester Gas and Electric Corp., Rochester, New York



R. E. Ginna

THE latest report issued by the House-heating and Air Conditioning Committee of the American Gas Association, known as Bulletin No. 73 issued August 29, 1947 makes the following statement:

"Over a long period of years through excellent advertising promotion and salesmanship by the industry, gas heating now enjoys a high degree of consumer acceptance. In developing this consumer acceptance the gas industry was the leader in developing and maintaining high standards and thus building consumer confidence."

Recognize the Best

We also know that new home owners who want the best in comforts for their families recognize that no other fuel is as reliable, clean and fully automatic as gas.

Can anything be more essential and basic than having such confidence for the future success of the gas industry? Why my concern, you rightfully ask, about confidence? Well, let us see who it involves and how house heating affects confidence or is affected by it.

Excerpts from talk presented before New Jersey Gas Association, Trenton, September 23, 1947.

First, is the consumers' confidence.

Second, is the investors' confidence.

Third, and equally important, is the employees' confidence.

If we can satisfy our consumers we shall gain the confidence of the investment world which will in turn provide the funds to assure the continued expansion of our facilities thereby providing good jobs and futures for our employees. Yes, it is as simple as that to say it, but brothers (and sisters) what a job!

Examine for yourself the vast number of articles, speeches, etc. on gas house heating in the trade and association papers of your industry during the past two years, the period of an unprecedented demand for our service to heat the homes of America, and what do you find missing? Yep, you guessed it, darn little recognition of what the consumer might or does think of us and yet we, you and I and the above-mentioned report, talk of having *built* consumer confidence.

Let's forget temporarily the lack of capacity, plenty of natural gas but no compressors, no pipe, no meters, the production problem, load factor and compensating loads, and all such problems which have taxed and worried us all to an extent without parallel in American business. Let us try and put ourselves in the shoes of Mr. and Mrs. Joe Smith, the customer whose confidence we must retain and obtain too.

For the moment he is tolerant of our inability to serve him and perhaps believes it is all part of the general economic situation but how long is he going to wait while some of us endeavor to decide:

1. Whether or not we shall get enough natural gas in time
2. Whether or not to put in more water gas sets
3. Whether or not to make high B.t.u. gas
4. Whether or not to build more coke ovens

5. Whether or not to increase distribution pressures

6. Whether or not to sit it out in hopes that someone else will find some new production method

7. Whether or not to raise the house heating rate drastically to a prohibitive level so as to discourage the business altogether

8. Whether or not atomic energy will come in time.

No! the thousands of Joe Smiths who are waiting to enjoy the comforts of automatic heating with that clean fuel—gas—are not going to come forward to help the gas utilities solve their problem—they expect us to be able to run our own business, manage our own problems, and serve all comers according to our franchise obligation without discrimination. In this connection, I cannot help but wonder about Joe Smith's thoughts, and his wife's too, on the claim we often make about our private utilities being business-managed.

Research Needs Support

I particularly wonder what they are thinking about our sitting on our hands, as signified by our being unwilling to fully support research and the other beneficial activities of the industry—whether through individual company enterprise or through our trade and related associations. Need I add what Joe Smith and his wife are thinking and, worse yet, are saying about us?

All of this sounds like scolding, but I challenge anyone to avoid being sympathetic to the views and feelings of the thousands of Joe Smiths waiting and begging for our industry's service.

This is as good a point as any at which to tell a "top secret." I recently agreed with the sentiment expressed by Chairman Milo R. Maltbie of the New York State Public Service Commission to the gas house heating situation.

At a recent informal conference of public utility representatives to consider

the matter, he pointed out that we—the utilities—were sadly mistaken if we thought the Commission was going to reverse the whole legislative policy of the State, involving service to our customers, by blandly establishing permanent house heating restrictions.

Many of us, in choosing jobs in the utility field, inherently considered the expansion and growth records of utili-

ties in keeping abreast of changes in public demand, and the ability of utilities to withstand changing economic condition, and that a utility was anchored in the community and was an essential and vital part of it.

The time has come for all of us to keep that tradition alive and to pass it along to our successors. What basic ingredient is missing? The answer, to me,

is expressed in one word—*research*. It is as simple as that—particularly when you expand it into production research, market research, consumer research, and the many other facets of this gleaming and promising gem—research.

To be sure, the present A. G. A. research program is admirable and a tremendous step forward, but I assure you it just begins to scratch the surface and therefore it is most inadequate. Think of it, only about \$900,000 for a five billion dollar industry! Yes, less than one million dollars to cure such headaches as the problem of taking care of all of the Joe Smiths and their grandchildren-to-come! Why, the million dollars isn't even "peanuts"!

I know how distasteful comparisons can be, especially electrical ones, but please listen to this. Many of you have heard of the electric heat pump and what the electric utilities are doing about it. Let me quote from a report just published by the Edison Electric Institute, as follows:

Electric Outlays

"Through the use of year-round air-conditioning made possible by the electric heat pump, the possibility of an increase in residential use of electricity in many households to an amount equal to over seven times the present average annual domestic consumption is implied in a report published by the Indoor Climate Committee."

The electric industry is now spending a million dollars on electric heat pump research installations alone.

Right now the manufactured gas utilities are up against the high cost of coal. Just suppose the coal mining industry had devoted appreciable funds 20 years ago to more improved and widespread use of mechanical methods of mining, might we not now be receiving coal at a lower cost? Let the gas industry take a leaf from that book and look ahead 20 or 30 years when perhaps we shall be out of natural gas. What then?—Shall we say to the Joe Smiths—sorry we cannot afford to serve you gas at all for heating? Or what shall we do in 18 years when oil runs out?

Recently I had the privilege of being a guest on General Motors' Train of Tomorrow. Naturally the question in my mind was—(Continued on page 570)

Industry Spends More for Research

● Which way is research heading? Have wartime jobs held up progress? Are industries leaning towards the use of independent research laboratories?

Evans Research & Development Corp., 250 East 43rd St., New York 17, has just finished a survey of representative companies to get the answers. Percentages (table below) are based on the number of replies to each question.

1. Of the time spent on research by your company, what percentage would you say is devoted to . . .

| | Chemical | Petroleum | Paper | Drug | Cosmetic | Food | Beverage | Misc. | Industry as a Whole |
|--|----------|-----------|-------|------|----------|------|----------|-------|---------------------|
| Improvement of present products or processes? . . . | 48.1 | 49.4 | 51.2 | 35.7 | 45.8 | 55.2 | 48.6 | 52.3 | 47.6 |
| Development of new products or processes in your own fields? | 42.3 | 44.4 | 41.6 | 55.0 | 46.7 | 41.8 | 44.5 | 37.9 | 42.3 |
| Development of new products or processes in other fields? | 15.4 | 8.3 | 15.0 | 12.0 | 20.0 | 18.0 | 15.0 | 13.6 | 14.7 |

2. In relation to the amount of money you spend on research today, would you say it is . . .

| | | | | | | | | | |
|-----------------------------|------|------|------|------|------|------|------|------|------|
| Greater than prewar? . . . | 88.6 | 91.1 | 84.0 | 88.7 | 81.3 | 85.8 | 91.6 | 83.6 | 87.1 |
| Same as prewar? | 7.8 | 8.9 | 12.0 | 11.3 | 18.7 | 14.2 | 8.4 | 13.7 | 10.6 |
| Less than prewar? | 3.6 | 0 | 4.0 | 0 | 0 | 0 | 0 | 2.7 | 2.3 |

3. In the future, do you estimate your research activities will be increased, decreased, or maintained at their present levels?

| | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| Increased | 75.0 | 91.6 | 76.0 | 63.1 | 60.0 | 71.4 | 66.6 | 72.3 | 72.5 |
| Decreased | 0.6 | 0 | 0 | 0 | 0 | 3.5 | 0 | 0 | 0.6 |
| No change | 24.4 | 8.4 | 24.0 | 34.9 | 40.0 | 25.1 | 33.3 | 27.7 | 26.9 |

4. If an increase is planned, do you expect to expand your own facilities, employ the services of an independent laboratory, or perhaps do both?

| | | | | | | | | | |
|------------------------------|------|------|------|------|------|------|------|------|------|
| Expand | 61.1 | 81.8 | 57.1 | 60.7 | 30.0 | 52.3 | 77.8 | 59.2 | 60.0 |
| Use independent lab. | 2.2 | 0 | 0 | 0 | 0 | 4.9 | 0 | 0 | 1.3 |
| Do both | 36.7 | 18.2 | 42.9 | 39.3 | 70.0 | 42.8 | 22.2 | 40.8 | 38.7 |

42.6 percent of the industry as a whole reported that the demand for production since the war has made it difficult to keep research activities at the desired levels. 57.4 percent of the industry found no difficulty.

As regards the length of time believed necessary before research and development activities can be brought up to the desired level, 32.1 percent of industry said less than one year; 44.8 percent, one to two years; 16.2 percent, two to three years, and 6.9 percent said more than three years.

42.2 percent of industry reported that a shortage of equipment or other facilities needed for research is interfering with desired progress. 57.8 percent replied in the negative.

51.7 percent of industry announced that personnel or equipment shortages or perhaps other considerations have at some time made it necessary or desirable to supplement their facilities with those of an independent research laboratory. 48.3 percent answered in the negative.

26.9 percent of industry as a whole reported its appropriation for research is based on percentage. 57.1 percent reported the basis was fixed sum, and 16.0 percent reported, "as needed."

—Business Week

Testing Manufacture of Oil Gas

Comprehensive outline of testing methods, equipment employed and results obtained while manufacturing oil gas in a by-product coke oven at Camden, New Jersey plant

IN January 1932, the Camden Coke Plant of the Public Service Electric & Gas Co. started to use oil in place of coal in one oven of its 37 oven Koppers Battery. The gas offtake of this oven was isolated from the rest of the battery so that test results could be obtained. The oven was continued in this service until November 1934.

The first oven on the east end of the battery No. 37 oven was selected for the test. This oven had the following inside dimensions, length 30 ft. 10½ in., height 9 ft. 6¾ in., and average width 1 ft. 4 in. Charging holes started from the coke side of the battery. No. 1 and No. 4 charging holes flared at the bottom and their passages were divided by coal spreaders. No. 2 and No. 3 charging holes had straight sides.

The standpipe of No. 37 oven was flanked off from the regular collecting main. A 12 in. offtake was welded into the side of the standpipe and a 12 in. main extended about eight feet into a 20 foot length of 30 in. pipe. The 12 in. main had flanges in the center where a blank could be inserted. This main was later replaced by a 20 in. main also with a removable blank.

Pitch Trap

At the end of the 30 in. main there was another section of 12 in. main about 20 feet long. In this piece of pipe there was a pitch trap (No. 1), a 12 in. gate valve and a butterfly valve. This 12 in. main led to a 12 in. riser pipe. The upper end of the riser was the inlet to the condenser, the lower end drained the flush from the main and was sealed in the lower pitch trap (No. 2). All the main from the standpipe to the condenser was equipped with spooning holes.

The condenser was a U. G. I. four pass, 6 ft. in diameter and 28 feet long. There were 396 tubes, 2 in. in diameter. The tar drains from the condenser were piped into the No. 2 pitch trap. River

BY ROBERT R. GRANT

*Public Service Electric & Gas Co.,
Camden, New Jersey*

water was used in the condenser with two inlet connections, a 3 in. and a ¾ in.

The outlet of the condensers was a 12 in. downcomer, which led into a 12 in. horizontal main. The horizontal main had a bootleg to drain off the drip oil, which drained into a 150-gallon tank through a seal. Just beyond the bootleg there was an 8 in. connection leading to a Roots Rotary Gas meter. An 8 in. line led from the gas meter to the 24 in. east suction main. There were gate valves at the inlet and outlet of the meter. The 12 in. horizontal main continued to the 24 in. suction main through a 12 in. gate valve, which could be used as a meter by-pass.

Floats Connected

There were two Shallcross governor floats, one of which was connected to the standpipe and the other to the middle of the 30 in. main. A Bacharach recording pressure vacuum gauge was connected to the same two points and could be used to record the pressure at either point. By means of a double throw switch either Shallcross float could be used to operate the butterfly valve.

The suction main was equipped with U gauges at the inlet of the condenser, the outlet of the condenser, the inlet of the meter and the outlet of the meter. The temperature of the gas in the main could be measured by the thermometers at the inlet of the condenser, the outlet of the condenser and the inlet of the meter. There was also a Brown thermocouple in the pusher side door which indicated the temperature of the gas as it left the oven.

A 1½ in. oil line was run from No. 7 oil tank at the river to the foot of No. 37 oven. Pressure was maintained

on this line by means of the oil transfer pump at No. 7 tank. At the foot of No. 37 oven a pressure gauge and a ¾ in. Empire Oil Meter were installed. A 1½ in. riser went up to the top of the battery and one branch connected to a flush spray in the 30 in. gas main. A 1 in. branch went to the inlet of a Quimby screw pump of four gallons per minute capacity.

From the outlet of the pump a 1 in. line went through a Cuno Oil Filter to the inlet of an Andale Oil Heater. From the oil heater the 1 in. line went through a ½ in. Empire Oil Meter to a manifold on the oven top. There was a valve at the outlet of the oil meter. The manifold fed six ¾ in. spray lines. There was one line to No. 1 charging hole, two lines to No. 2, two lines to No. 3 and one line to No. 4 charging hole. Each spray line consisted of a ¾ in. gate valve, a Barco swing joint, a four foot length of pipe, a double swing joint and a Monarch No. D-34 oil spray.

These oil spray tips were nitrated to

Vision

● At the top of every business is a man responsible for the way that business grows.

He is the man who lives most in tomorrow.

He knows that a business which has no thought for the future has no future.

He must look five years ahead while others look five days ahead.

He must see the harvest before the seed is sown.

Tomorrow is the chief responsibility of top management. To do something about it calls for courage, imagination, foresight.

Because management has met this obligation so well, America enjoys the greatest living comfort, the highest real wages, of any country in the world. And tomorrow's goals are still greater.

—N. W. Ayer & Son, Inc.

stand the temperature and wear. The sprays fitted flush in a special three hole charging hole lid. On No. 1 and No. 4 holes the sprays were tilted so that the oil would miss the coal spreader in the bottom of the hole. The manifold was connected to a steam line so that the oil sprays could be steamed out into the oven. Pressure gauges were installed at the inlet and outlet of the oil pump. Thermometers were installed at the inlet and outlet of the oil heater and all oil piping was insulated with hair felt.

A flush tank of 7,500 gallons' capacity was installed on the ground at the end of the battery. No. 1 pitch trap, the upper 12 in. gas main and the condenser drained into No. 2 pitch trap, which in turn drained into the flush tank. Two Worthington Duplex steam pumps, one 6 in. x 4 in. x 6 in. and one 7½ in. x 6 in. x 10 in. were supplied to handle the flush. There were four 1½ in. flush sprays into the 30 in. main, all fed by a 2 in. manifold.

One flush pump fed one end of the manifold, the other pump fed the other end. The pumps had separate suctions from the 7,500 gallon flush tank. Both pumps could also be used to pump to storage as well as to the manifold. There was a connection between the suction of the oil spray pump and the tar manifold so that flush could be sprayed into the oven. A heating coil was provided in the flush tank and there was a pressure gauge on each tar pump.

A 1½ in. steam line was available on top of the oven, supplying steam for the Andale Heater and for steaming out the oil sprays at the end of the run. There were steam sprays for all four charging holes and for the coke side door. All these sprays were designed and fabricated in the plant. They used a piece of ¾ in. pipe 36 in. long which extended into the oven.

Orifice Made

The orifice was made by drilling the desired size hole in a piece of 1-1/16 in. cold rolled round steel 3 in. long. The ends were threaded to ¾ in. standard pipe thread. The orifice nipples were installed outside the oven to facilitate changing them. The entire spray could be lifted out by breaking one union.

We had orifices ranging in size from 3/16 in. to 9/16 in. diameter. Steam connections were also available for steaming out the 30 in. main, the condenser inlet and outlet and the 12 in. horizontal main down at the meter. A 2 in. steam line fed the two flush pumps.

Since all the oil oven gas would be under a slight suction while it was isolated, a small Ensign Reynolds gas compressor was installed to provide gas under pressure for the calorimeter and gravity recorder. This gas was taken from the outlet of the condenser, through oxide purifier. The compressor supplied gas at a pressure of 6 in. water to a

manifold. The manifold provided gas for the Thomas Recording Calorimeter, the Permutit Ranarex Specific Gravity Recorder and for gas analysis samples. These test instruments were checked by our own instrument men and the service men of the manufacturers.

The general method of operation:

When the oven was shut down, it was left in the following condition:

- (1) The blank was in the main next to the standpipe.
- (2) The 12 in. inlet valve to the condenser was closed.
- (3) The 6 in. inlet valve to the meter was closed.
- (4) The 6 in. outlet valve to the meter was closed.
- (5) The 12 in. by-pass valve around meter was closed.
- (6) The flush pump was circulating flush between the 7,500 gallon tank and the 30 in. main.
- (7) The 30 in. main was steamed out and vented through a spooning hole.
- (8) The standpipe lid was up.
- (9) All oil and steam was turned off the oven sprays.
- (10) The governor was not in operation.

The start up:

- (1) Oven doors were sealed, standpipe closed and all charging hole lids were put in place.
- (2) All oil and steam sprays were connected.
- (3) The oil pump was started and the oil spray in No. 1 charging hole was turned on.
- (4) The blank was pulled and filler piece sealed in as soon as rich gas appeared at spooning hole between blank and standpipe. Then this spooning hole was sealed.
- (5) Steam was shut off the 30 in. main and the spooning hole was sealed when gas appeared there.
- (6) The inlet valve to the condenser was opened.
- (7) The inlet valve to the meter was opened.
- (8) The outlet valve to the meter was opened.
- (9) The other five oil sprays and the steam sprays were turned on.
- (10) The governor was put in service.
- (11) The small gas compressor was started, then the calorimeter and the specific gravity recorder were started.

The shut down:

- (1) All oil and steam sprays were turned off.
- (2) The inlet and outlet valves to the meter were closed.
- (3) The gas coming off the oven was allowed to pack the condenser, then the inlet valve to the condenser was closed.
- (4) The governor was shut off.

Slogans Aid Pennsylvania Workers

THE simple expedient of spelling out five pertinent safety reminders on the roof beams at the New Castle, Pa., district shops of The Manufacturers Light and Heat Co., is helping to keep gas company workers "on the beam" in safe working and driving.

Following the recent completion of this building the steel "I" beams were covered with aluminum paint, and the safety slogans painted on in black letters about 18 inches high. These bold reminders are directly in the line of vision as truck drivers, pipe fitters, laborers, and other employees enter the shop each morning.

This method of keeping truck drivers safety-minded has been indorsed by the Pennsylvania State Police. An additional safety reminder, the slogan "Use Care Today," has been painted near the bottom on the inside of a roll-up door where truck drivers will see it on their way to the first morning job.



Standing out like the proverbial sore thumb are safety reminders painted on roof beams

Defensive Driving Defined

● A defensive driver is one who makes allowances for the lack of skill and lack of knowledge on the part of the other fellow—who recognizes that he has no control over the unpredictable actions of other drivers and pedestrians, nor over conditions of weather and road, and who therefore develops a defense against all these hazards. He concedes his right of way and makes many other concessions to avoid collision.

● The defensive driver thinks ahead about what *might* happen and is ready for *any* emergency. He anticipates trouble by thinking for the other fellow, thus avoiding situations which might result in an accident. In a sense, he is a pessimist since he always expects the other motorist or pedestrian to do the wrong thing and guards against it.

● The defensive driver never places complete faith in the other fellow's hand signals. He is always prepared for the motorist who ignores stop signs. He knows that some drivers will turn right even though traveling in the left turn lane. He keeps out of collisions by slowing down at all intersections. He avoids ganging-up and following too closely. He keeps to the right and lets inexperienced and speeding drivers go on their way. He pumps the brake pedal to flash a stoplight warning to the motorist behind. He gives adequate and timely signals and has the necessary skill to provide that *added margin of safety* in emergencies.

Is defensive driving worth while? We think so. Study of thousands of accidents proves that few are caused by mechanical failure. They are caused largely by human failure. Usually both drivers fail in some degree and each is partly at fault. In most cases either one could have avoided the accident had he been a defensive driver.

For many years it has been the policy of the Consolidated Edison Safety Bureau to further the idea of "defensive driving" as the one sure method of reducing the terrible toll of highway accidents.

Will you do your part?

W. F. Brown, Safety Director,
Consolidated Edison Co. of N. Y. Inc.

- (5) The blank was inserted in the main next to the standpipe.
- (6) The standpipe cap was opened.
- (7) The 30 in. main was steamed out and vented through spooning hole.
- (8) The small gas compressor, the calorimeter and the Ranarex were shut down.

The danger of an explosion during the start up and shut down periods was minimized by keeping the main full of gas under pressure until everything was sealed tightly.

During the time that the oven was off the main:

- (1) All oil and steam sprays were cleaned.
- (2) The 30 in. main and the 20 in. offtake main were cleaned.
- (3) The coke in the oven was pushed out.
- (4) The oven walls were decarbonized.
- (5) The charging holes were cleaned.
- (6) The standpipe was butted.
- (7) The gas meter was cleaned.
- (8) The gas compressor, calorimeter and Ranarex were serviced.
- (9) The excess tar in the flush tank was pumped to storage.

The oil run:

During the oil run we admitted the maximum amount of oil into the oven that could be completely fixed. We found that the temperature of the gas leaving the oven was the best means of checking the gasification of the oil. For each grade of oil there was an optimum temperature to be maintained at the gas offtake. If the temperature fell below the optimum, the oil was not completely cracked. If the temperature was above the optimum, an excess of lamp black was made. This optimum temperature could vary with each boatload of oil, but actually we found it necessary to change it only four times in three years.

During the beginning of the run the oil was run in as rapidly as possible through all six sprays. This was done to get the oven temperature down below the lamp black point as rapidly as possible. A large amount of lamp black gave much pressure trouble by fouling

the main, especially the condenser inlet.

As the offtake temperature approached the optimum, the amount of oil admitted was cut. This could be done in several ways. First—the rheostat on the oil pump gave five rates of speed. Second—the number of oil sprays in use was cut down. Third—we could change the pump capacity by changing the pressure of the oil on its suction.

As a general practice we started with six sprays, first cut to four sprays and finally to three sprays. Occasionally it was necessary to cut to two sprays as it was advantageous to make the oil gas travel as far as possible in the oven. The first sprays to be taken off were always those nearest the gas offtake side. Our usual running condition was one spray in each of the following charging holes, No. 1, No. 2 and No. 3.

It was found that better operating results could be obtained by admitting steam to the oven during the oil run. The oil gas itself was richer when cracked in the presence of steam and there was much less lampblack and wall carbon formed. Before steam was used during the run there was considerable pressure trouble in the oven itself, due to carbon forming from wall to wall. This trouble was entirely eliminated by the use of steam during the run.

Steam during the run decreases the yield of oil coke per gallon of oil, but increases the amount of gas made. It was also found helpful to have a steam purge of at least an hour before shutting down. All the oil was shut off and additional steam admitted to the oven through the oil sprays. A large cloud of fine coke dust, dissipated at every push, was eliminated by the steam purge.

Rich Gas Formed

The gas meter and the calorimeter proved that at least 4,000 cubic feet of rich gas was formed during this purge. Gas analyses taken during that time proved that a considerable amount of oil gas was formed after the oil is turned off, probably from oil lying on the bottom of the oven. After one hour of purging the gas becomes mostly water gas. The use of steam during the run increased the running time three hours and decreased the decarbonizing time one hour.

Occasionally during the steam purge

the gas meter was by-passed. At that time steam would be admitted to the inlet of the condenser, the outlet of the condenser and the 12 in. horizontal main at the meter. The steam loosened up any deposits in the main, so that they ran down the main into the 24 in. suction main through the 12 in. by-pass valve.

The meter inlet and outlet were clean every day during the shutdown period, for condensate built up in the 8 in. main and caused back pressure if not removed regularly.

It was found that the oven operated

most satisfactorily at a back pressure at the standpipe of about one mm of water = + one mm in oven at No. 4 charging hole.

There was some trouble at first with carbon building up on the oven floor. It interfered with pushing the oven and threatened to push in the bottom of the oven walls. The regular pusher ram made no impression on it.

We removed the front runner from the pusher ram and substituted a piece of 2 in. steel 20 in. high and 13 in. wide, this was bolted to the face of the ram in a vertical position. The lower

end was toothed and the teeth hard surfaced with Stellite. It was set at such a height that it would just clear the oven sill and would carry the weight of the ram head in the oven. This device was successful in keeping the floor carbon down to a minimum. The ram was run back and forth in the oven at least three times at each push.

The first experiment on the oil oven was an attempt to completely gasify Bunker C oil. The flush system being empty, we first pumped 5,000 gallons of Bunker C oil into the 30 in. main, from which it flowed through the pitch traps into the flush tank. The large flush pump was started up circulating the oil through the flush sprays into the main and back to the tank again. Then the oil pump was started up, with its suction connected to the discharge of the flush pump, and the oven was put on the line.

The tar made during the operation flowed down into the flush tank diluting the oil there, thus at the start of the run the oven sprays were putting straight oil into the oven, but the longer the run, the greater the percentage of tar in the mixture. The mixture eventually became heavy and full of free carbon.

This mixture soon reached a consistency which could not be handled by the oil sprays. We used no steam sprays in the oven at this time and we had so much wall carbon that pushing was difficult. A long steam purge through the oil sprays was used to get the oven in shape to be pushed.

The next method of operation to be used on this oven was the admission of straight Bunker C oil through the oil sprays, but with no steam sprays in the oven. The high pressure oil pump on the battery took oil directly from the transfer pump at No. 7 oil tank. The flush had no oil in it, but was a mixture of oil, gas, tar and water.

The oil sprays would handle the straight oil readily and we had no more trouble with plugged spray nozzles. There still was considerable wall carbon and we had pressure trouble due to carbon building across from wall to wall. The steam purge gave some help in pushing.

The next method of operation tried on this oven was the one which proved

TABLE 1
TABULATION OF TEST DATA

| | Oil & tar flush mixture thru oil sprays no steam sprays | Straight Bunker C oil thru oil sprays no steam sprays | Straight Bunker C oil thru oil sprays 3 steam sprays | Straight Bunker C oil thru oil sprays 1 steam spray. Low Sp.gr. run | Straight Bunker C oil thru oil sprays 1 steam spray 46 Hr. run |
|--|---|--|---|---|--|
| Oil run, hours | 17 | 18 | 21 | 20.5 | 45 |
| Steam purge hours | 4 | 1 | 1 | 1 | 1 |
| Total run, hours | 21 | 19 | 22 | 21.5 | 46 |
| Decarbonizing hours | 3 | 3 | 2 | 2.5 | 3 |
| Gals. oil per run | 2600 | 2519 | 2871 | 2103 | 5295 |
| Gals. of oil per hour | 153 | 138 | 137 | 103 | 118 |
| Cu.ft. gas per run | 122315 | 197917 | 197672 | 183811 | 398449 |
| Cu.ft. gas per gal. oil | 47.0 | 78.6 | 68.9 | 87.4 | 75.0 |
| B.t.u. of gas | 850 | 1113 | 1270 | 990 | 1321 |
| Sp.gr. of gas | .52 | .74 | .78 | .63 | .75 |
| Cu.ft. of 128 B.t.u. prod. gas per run | 100127 | 293115 | 370946 | 215295 | 798890 |
| Cu.ft. of 525 B.t.u. mixed gas per run | 222442 | 491032 | 568618 | 399106 | 1,197,339 |
| Cu.ft. of 525 B.t.u. mixed gas per gal. of oil | 85.6 | 195.0 | 198.1 | 190.0 | 226.0 |
| B.t.u. per gal. of oil | 39950 | 87482 | 87500 | 86526 | 99000 |
| Cu.ft. of oil gas per hour | 61160 | 10417 | 8985 | 8549 | 8478 |
| Cu.ft. of 525 B.t.u. mixed gas per hour | 11122 | 25844 | 25846 | 18563 | 25475 |
| Gals. of dry tar per run | 479 | 546 | 763 | 564 | 2079 |
| Gals. of dry tar per gal. of oil | .18 | .22 | .27 | .27 | .39 |
| Lbs. coke per run | 1500 | 1300 | 700 | 728 | 1700 |
| Lbs. coke per gal. of oil | .58 | .52 | .24 | .35 | .32 |
| Lbs. steam in steam sprays per hr. | None | None | 1232 | 475 | 275 |
| Lbs. steam in steam purge per hr. | 1040 | 1040 | 1040 | 1040 | 1040 |
| Lbs. steam per gal. of oil | 1.6 | .41 | 9.80 | 5.35 | 2.59 |
| Av. gas offtake temp. | 1500° F. | 1180° F. | 1247° F. | 1468° F. | 1242° F. |
| Maximum B.t.u. | 1300 | 1320 | 1500 | 1300 | 1462 |
| Minimum B.t.u. | 560 | 900 | 800 | 700 | 960 |
| CO ₂ | 2.62 | 1.00 | 2.90 | 3.70 | |
| H ₂ | 10.67 | 21.48 | 32.90 | 17.80 | |
| O ₂ | .89 | .60 | .40 | .50 | |
| CO | 2.48 | 1.15 | 1.70 | 1.90 | |
| CH ₄ | 49.00 | 65.74 | 55.50 | 51.50 | |
| H ₂ | 31.60 | 6.72 | 4.60 | 22.00 | |
| N ₂ | 3.10 | 3.30 | 2.00 | 2.60 | |
| Calc. B.t.u. | 854 | 1190 | 1333 | 1007 | |
| Calc. Sp.gr. | .52 | .74 | .84 | .66 | |

ANALYSIS OF GAS AT END OF ONE HOUR STEAM PURGE:

| CO ₂ | H ₂ | O ₂ | CO | CH ₄ | H ₂ | N ₂ | Calc. B.t.u. | Calc. Sp.gr. |
|-----------------|----------------|----------------|-------|-----------------|----------------|----------------|--------------|--------------|
| 9.90 | 1.59 | 4.56 | 18.10 | 13.70 | 42.10 | 9.75 | 371 | .60 |

Analysis of oil used:

Gulf Bunker C oil

Sp.gr. 1915 Baume

Viscosity 52 Secs. per 60 cc. at 122° F.

Carbon 6.60 percent

Sulphur 1.51 percent

Flash point 176° F.

most successful. Straight Bunker C oil was run through the oil sprays. A steam spray was inserted in the coke side door about 6 in. from the oven floor. Steam sprays were also inserted in No. 2 charging hole and No. 3 charging hole. These were turned on as soon as the oven was on the line, and stayed on until the shut down.

The oil was shut off during the last hour of the run and steam admitted through the oil sprays as usual. This use of steam cut the coke made in half, but the half which was gasified was mostly breeze and fines. The heat transfer through the oven walls was improved by the action of the steam in preventing the building up of wall carbon. There was very little pressure trouble with this method of operation, and the oven required the minimum amount of attention. The oven was run in this manner for more than two years.

An attempt was made to make low specific gravity oil gas. Straight oil was run through the oil sprays and steam was admitted to the oven through one steam spray in No. 1 charging hole. In this instance, the rate of oil admission was varied to keep a constant, predetermined specific gravity. The oven was run in this manner for two weeks but several difficulties were encountered.

The worst was the formation of a large amount of lampblack. This plugged off the standpipe, the main and the condenser, giving us considerable pressure trouble. (Continued on page 572)

Air-Conditioning Study

Time-temperature report on load coincidence shows that every corner must be explored for means of lowering system costs

BY GEORGE E. MAY

Chairman, A. G. A. Technical Advisory Group for Gas Summer Air-Conditioning Research

RISING costs of air-conditioning installations place added emphasis on the need for sharper engineering in system design. Every corner must be explored for means of lowering system costs if increased sales of gas summer air-conditioning are to be realized.

The greatest influence on excessive cost seems to be over-design of system size. And, strangely, oversized equipment actually results in inferior performance through poor, if any, control over relative humidity. Unless a system is especially designed for humidity control, it is the rule that the more the unit cycles "off" because of a satisfied thermostat, the higher the inside relative humidity will rise.

One of the important causes of over-design is the pyramiding of non-concurrent heat loads. The load to be used as a basis for selecting the size of an air-conditioning unit is the maximum simultaneous total of sensible and latent

loads. This is generally based upon a differential of 95° to 78° F dry bulb depression plus solar radiation and other loads. The accompanying chart shows that the outside dry bulb does not reach peak until 5:30 p.m. and the average daily temperature during the same summer months is considerably less.

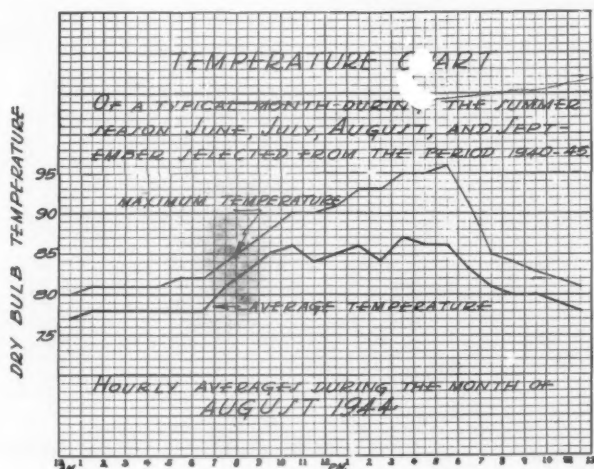
If the maximum sun load occurs through the east windows at 10:30 a.m., and the engineer uses the conventional 17° temperature difference for heat transmission through walls, ceiling and floor, which occurs at 5:30 p.m., he is indeed adding two non-concurrent peaks. If the outside weather condition constitutes the major influence or air conditioning requirements, the system will certainly be badly over-designed.

If the maximum load occurs through the west windows at 3:30 p.m., and the engineer uses 17° temperature difference, then the peaks are simultaneous and the system is more accurately designed with a far better chance of doing a good job.

Further, the engineer must consider the temperature lag through the walls and ceiling in establishing the maximum simultaneous peak of the system in question. Walls of heavy masonry construction have a lag of as much as eight hours. With such a wall the 3:30 p.m. sun load must be added to a 7:30 a.m. outside-inside dry bulb temperature differential which is only 84° — 78° = 6° and not 17°.

In order to apply these principals, the engineer needs only the standard A.S.H. & V.E. "Guide," which has all the necessary data on wall lag, and with the aid of local weather bureau data a curve can be plotted for the particular field of practice similar to the one shown in the accompanying chart. The results will be more accurate sizing, superior performance, and enhanced popular concept of air-conditioning.

Research Project DGR-3-AC of the Committee on Domestic Gas Research of the American Gas Association.



Temperature chart plotted for the New Orleans area

Quinn Calls for Industrywide Support of National Advertising Campaign



J. J. Quinn

THE key task of marshalling wholehearted continued support behind the gas industry's national advertising campaign rests upon the capable shoulders of J. J. Quinn, vice-president, Boston Consolidated Gas Co., chairman-elect of the National Advertising Committee, American Gas Association.

Assisted by able lieutenants Ray T. Ratliff (advertising manager, The Gas Service Co., Kansas City, Mo.) as chairman of the Domestic Gas Copy Committee and J. P. Leinroth (gas sales manager, Public Service Electric and Gas Co., Newark, N. J.) as chairman of the Industrial and Commercial Gas Copy Committee, Mr. Quinn is directing committee efforts.

"To promote public acceptance of gas as a modern, efficient fuel for household, industrial and commercial purposes for which heat is required."

This steadfast purpose has been the guiding star of the gas industry's national advertising program, now entering its twelfth year.

That program has become, in Mr. Quinn's own words, "a model of its kind in the field of cooperative association advertising—it has been recommended as an ideal pattern to be followed by other industries. It has been resultful."

In order to add to the profitable results of gas industry national advertising, an ambitious new two-phase program has been prepared. The carefully-planned framework of this national effort was outlined by the chairman during the recent A. G. A. convention.

"First," Mr. Quinn stated, "is the industrial and commercial phase.

"This antedates our industry's domestic or residential advertising on a national basis by 11 years. Here it is proposed to continue without major departure the themes and markets presently being covered. Special attention will be given to see that this advertising does not feature or solicit certain business which must generally be refused at this time because of continuing shortages and uncertain deliveries of materials and equipment urgently needed for plant and system expansions.

"The second phase of our advertising program embraces the domestic use of gas.

"In the programing of our domestic or residential advertising, we have for the first time the benefit of the facts disclosed by the recent industrywide survey by the Elmo Roper organization who are recognized as leaders in the conduct of public opinion polls.

"The information disclosed by this survey



R. T. Ratliff



J. P. Leinroth

leaves no doubt that *industrywide* and *immediate* action is essential, if we are to convince the American Homemaker that 'Gas Has Got' what she wants in a modern automatic range. She knows what she wants, never mistake that. Sometimes she is not too

clear or even consistent in how she expresses her preference but we all know and recognize that what she wants she will get—and usually sooner than we think.

"For the first time in 12 vital trying years, our advertising and promotion are properly coordinated in theme, in timing, in appeal and the snowballing effect may be clearly seen. We have hit the bull's eye! We can proudly, if ungrammatically say, 'Gas Has Got It'—and 'we're telling the world!'

"This is a three-part national program on modern automatic gas ranges. It consists broadly of—

1. A. G. A. National Advertising and Promotion materials
2. 'CP' Gas Range Manufacturers National and Regional Advertising and Promotion Materials
3. Local utility and dealer newspaper advertising promotion and direct selling effort.

"In terms of advertising pressure, this three-phase program for the next 12 months represents an anticipated expenditure in ex-

Philadelphia Resumes Kitchen Service

A COMPREHENSIVE modern kitchen planning service for the benefit of Philadelphia homemakers has been initiated by The Philadelphia Gas Works Co. in cooperation with local distributors of leading cabinet lines.

The opening marks a resumption of this activity by the utility which before the war sponsored a kitchen exhibit for many years. The presentation features an exhibit at the company's main show room consisting of eight full-size, attractively decorated kitchens equipped with automatic gas appliances for modern easier living.

The new exhibit is directed particularly at the retail market, and dealers have been invited to see the facilities as a means of show-

ing customers practical suggestions for modernizing their kitchens.

The utility will continue its past policy of not selling cabinets and sinks, but will refer inquirers to the participating distributors for processing.

The modern gas-equipped kitchens are designed to show the great number of Philadelphia homeowners, particularly those with row-type houses having small kitchens, what can be done to improve their facilities.

The kitchen planning program provides dealers with new opportunities to profit through sales of kitchen cabinet equipment and sink ensembles, sales of modern gas appliances and accessories to complete the kitchen, and sales of equipment for the modern automatic home laundry.



H. R. Zeamer, supervisor of the Dealer Division, and Marie Schanbacher, kitchen planning consultant, at work desk in the center of utility's new kitchen planning headquarters

cess of \$4 million. Approximately 60 percent of this sum will be spent for newspaper advertising, the major part of it by gas companies and the remainder by manufacturers and dealers.

"Strictly speaking, this program was not designed primarily to sell large quantities of automatic gas ranges today—there are not enough automatic gas ranges in today's production to do the kind of selling job that this program is capable of doing. However, if we do all we can to tie-in actively with this program, the results will snowball as we accelerate our efforts and we can confidently expect that automatic gas range production will increase.

"I believe you will agree that inasmuch as the Elmo Roper Survey disclosed that large numbers of those interviewed did not realize that the 'CP' gas range of yesterday and today's fully gas automatic 'CP' ranges (and gas appliances in general, if you please) have equally satisfactory or better convenience and operating features than those of competitors, it is high time for our industry to now join all our forces to make this 'Gas Has Got It' program the greatest cooperative, industry-wide accomplishment ever attempted by any group, at any time, anywhere."

Tappan Publishes Postwar Sales Maker

THE first postwar edition of the sales maker, "For You," has just been published by The Tappan Stove Company.

Covering all features of the company's 1948 line of gas ranges, "For You," is a 48-page booklet primarily designed for use in selling ranges in the prospect's home. It is indexed and attractively designed with four-color art work.

Considerable emphasis is given the range company's new assembly set with automatic clock control, two electrical outlets, "oven-on" indicator and a cooking unit that prevents tipping of utensils.

I. G. T. Fellows Build Own Futures



Twelve of the 13 men currently holding fellowships in the Institute of Gas Technology

FELLOWSHIPS in the Institute of Gas Technology, Chicago, are currently held by 13 men, six in each of the first two classes and one in the fourth and final year.

The backgrounds of the second year fellows were presented in the September 1947 issue of the MONTHLY. Information concerning the new class is presented below:

Robert W. Brooks is a native of Goshen, Ind., and a recent graduate of Purdue University. His education was interrupted by the war so that after the completion of his junior year he spent a year as a cadet at U.C.L.A. studying meteorology and then two years in the Army in air traffic control with the rank of lieutenant. He completed his undergraduate work this summer.

John R. Brough is a native of Texas and a 1946 graduate of Mississippi College which he attended as a V-12 student. He attended Illinois Institute of Technology

during the past year in order to obtain an engineering background to augment his training in pure Science.

Frank Coley is a native of Virginia, graduated from Virginia Polytechnic Institute in 1943 and worked for Tennessee Eastman Corp. for a year before entering the armed forces. He then worked at Los Alamos for over a year, finally as a civilian, before returning to Eastman. His most recent work there was on thermal cracking of hydrocarbons.

Rex T. Ellington, Jr., is a native of Colorado and a 1943 graduate of the University of Colorado. He completed one semester of work at I.G.T. before he enlisted in the U.S.N.R. He studied electronics at Princeton and M.I.T. before becoming a radar officer in the Naval Air Corps. He put in one term of summer employment-training with the Atlanta Gas Light Co. in 1943.

John C. Garver is a native of Rockford, Illinois, and has obtained both B.S. and M.S. degrees in Chemical Engineering from the University of Wisconsin. Because of his advanced standing he will complete his required work for the degree of Master of Gas Technology in somewhat less than the usual time.

Don E. Helbling is a Chicagoan and a graduate of Illinois Institute of Technology which he attended first as a "coop" student and finally as a V-12 student. He has spent 1½ years in active naval duty and is still active in the U.S.N.R. He will take a two-week cruise next summer in addition to his employment-training in industry.

Henry C. Owen, Jr., is a native of Dallas and a 1942 graduate of Texas A. & M. He has worked for the Dow Magnesium Corp. and the Celanese Corp. of America. His most recent work was in design although previous work includes pilot plant operation.

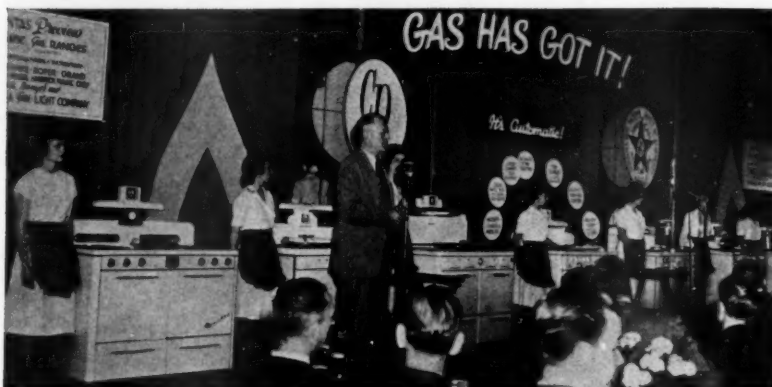
Willard W. Dow is a fourth year man and a candidate for the Doctor of Philosophy in Gas Technology. All of the new men, with the exception of Mr. Brough who majored in chemistry, are chemical engineering graduates.

Con Edison Analyses Safety Trends



Central Safety Committee of Consolidated Edison Co. of New York, Inc., meets regularly to study trends of company's accident record. Left to right: Arthur H. Keboe and James F. Fairman, vice-presidents; Col. John Stilwell, vice-president and chairman of the committee; Robert B. Grove, vice-president, and Hudson R. Searing, executive vice-president. Not pictured but a committee member is A. Augustus Low, vice-president

Atlanta Dealer Meeting Features Mass Cooking Demonstration



J. W. Lea, sales manager, Atlanta Gas Light Co., and home service representatives who conducted cooking demonstrations for dealers and salesmen on nine automatic gas ranges

AN unusually dramatic demonstration of the nine points that women want in their cooking appliances featured a large metropolitan dealer meeting sponsored by the Atlanta Gas Light Co., at the Ansley Hotel in Atlanta, Ga., October 30, in conjunction with the American Gas Association's industrywide "Gas Has Got It" promotional program.

Approximately 300 Atlanta dealers and their salesmen attended the meeting, first in a series of dinner previews of the new auto-

matic gas ranges built to "CP" standards to be sponsored by the utility and cooperating range manufacturers.

The mass cooking demonstration was conducted on the stage by nine home service representatives on seven fully automatic gas ranges.

Every manufacturer who had an automatic gas range available participated in making the show one of the most spectacular cooking demonstrations ever seen in the area. It is

believed to have been the first time, at least in that part of the country, that so many ranges have been used simultaneously and so many competitive manufacturers of ranges have cooperated.

The nine points brought out in the Elmo Roper Survey were dramatically demonstrated in the following ways:

Best automatic features by an oven meal cooked in one of the ranges while the meeting was underway.

Cooks food better by baking four layers of cake at one time.

Costs less to operate by baking rolls and broiling fish in a combination oven and broiler at the same time.

Easy to operate by cooking a broiler meal.

Cleanliness by cooking broccoli in a pressure cooker on top of range and wiping vessel on white uniform to show absence of soot or dirt.

Cooks things quicker by making coffee on the high speed flame of the giant burner, having someone in the audience time the procedure.

Cool in operation by melting chocolate on top burner in vessel with white silk scarf tied around it; when chocolate had melted scarf was removed to show that it had not been harmed in any way.

Costs less to buy new by pointing out all the values in a new automatic gas range.

Modern conveniences by describing each in brief detail.

Each demonstration was so timed that the foods finished cooking in sequence. All foods cooked were assembled for display and were ready for inspection at the same time. After the meeting was over many members of the audience went up to the stage to examine the ranges and the foods prepared on them.

The Atlanta Gas Light Co. and cooperating range manufacturers plan to duplicate the show in Macon and Rome for the benefit of gas company personnel and dealer salesmen in those areas.

Gas Does Four Big Jobs in Hartford



Men and women alike shared the culinary honors at this gas cooking party which The Hartford Gas Co. (Conn.) recently sponsored for its dealers. Gas company hosts Mrs. Arra Sutton Mixer (shown at left), Alyce Salisbury and D. R. Schively (second from right), at work assisted by representatives of the Glenwood Range Co. and the Brown-Thomson department store. The party was one of a series which the utility has conducted in the Hartford area covering the different brands of gas ranges represented in that market

Gas Companies Win Annual Report Awards

THE Seattle (Washington) Gas Co., was awarded a bronze "Oscar of Industry" by *Financial World* magazine for the best annual report in the manufactured gas industry in 1946. A similar award was presented to Consolidated Natural Gas Co., New York, for the best annual report in the natural gas industry.

The survey which is sponsored each year by *Financial World*, covered approximately 3,500 annual reports issued by companies in all classifications of business. The independent board of judges headed by Dr. Lewis Hancy of New York University eliminated nearly 75 percent of these reports in the preliminary judging and the remaining reports were awarded Certificates of Merit.

From this latter group, the judges selected the best reports in each of 95 classifications of industry.

In the natural gas classification United Gas

Corp. won second place. Consolidated Gas Co., which won the Oscar this year was judged the best in the "Public Utility Industry" for 1943 and was awarded Certificates of Merit for its 1944 and '45 reports. The Brooklyn Union Gas Co. received second prize in the manufactured gas division.

Annual reports were judged for financial and statistical information; art, typography and format; semantics and editorial excellence, service to stockholders and public; and public relations impact.

History of Energetic South Atlantic Gas Company Marked by Rapid Growth

A PEACETIME utility company fashioned in wartime from a group of operating companies in two states, including Georgia's oldest utility, has developed into one of the South's fastest-growing public service corporations.

This is the South Atlantic Gas Co., founded by a Georgian who reversed the usual trend and returned to his native state after successful financial and utility operations in the east and midwest.

Hansell Hillyer, president and founder, was born in Atlanta, reared in Macon, educated at Georgia Tech and then after service in World War I left the South, as so many thousands of other southerners have done, to seek opportunity outside his native heath.

He returned south in 1944, following his sale of utility interests in Missouri and subsequent purchase of the gas company in St. Augustine, Florida. This was the first operating unit of what was to become the South Atlantic Gas Company.

Shortly after acquiring the St. Augustine gas business, the Savannah Gas Co. property was put up for sale under the requirements of the "Death Sentence" section of the Federal Holding Co. Act.

Control Acquired

Mr. Hillyer and his associates after long and discouraging negotiations finally bought control of the Savannah Gas Co., and soon added to this holding the gas companies at Orlando, Winter Park and Deland, Florida.

A contract with the United Gas Corp. signed by the new organization a few months ago, assures natural gas for Savannah which has depended on manufactured gas for 99 years. This natural gas supply for Savannah and other cities served by South Atlantic will become available upon the completion of the giant pipeline now under construction from the gas fields of Mississippi.

South Atlantic Gas, a veritable baby among public utilities, has made dramatic progress during its short period of operations.

First of all, it is a utility created almost 100 percent by southern capital.

With the acquisition of the Savannah Gas Co. properties in February 1945, the company became the Savannah-St. Augustine Gas

Company. Then in January 1946, with the purchase of the Orlando, Winter Park and Deland Properties, the company received its present title.

Meantime, the 40,000 shares of common stock in the original company which were issued for sale at \$15, had been split two for one, and 32,000 additional shares of common issued to finance in part the purchase of the new properties. Quotations of this stock on the Atlantic boards has ranged from nine to around 12½ this year, indicating its increase in value.

In addition 8,250 shares of five percent preferred stock were issued at \$100 and quickly purchased, mostly by Georgia investors.

Practically all of the common and preferred stock in the baby utility is Georgia-owned, whereas, for perhaps 40 years preceding the organization of the new company, control of all these properties was held in eastern financial centers.

Founded during the inflated war years and operating in cities where war production and other war activity had abnormally increased population and gas consumption, engineering experts forecast as much as a 20 percent decrease in gas sales for the utility when the war was over.

Instead, sales of the new gas company have steadily reflected a comfortable increase since the war. Even in Savannah where the sudden closing of the shipyards accounted for the immediate loss of some 20,000 jobs, sales are currently reported at an all-time high.

Other honors in the public utility field went to New Orleans Public Service, Inc., for the best report of southern public utilities, Pacific Gas and Electric Co., San Francisco, Calif., best of western public utilities, and San Diego Gas and Electric Co., San Diego, Calif., best of southwestern public utilities.

Also taking honors were Dresser Industry, Inc., Cleveland, O., for the best annual report in the building equipment industry, and the Rockwell Manufacturing Co., Pittsburgh, Pa., for the best report in the metal products industry.

Texas Eastern Completes Inch Line Purchase

TITLE to the Big and Little Inch pipelines passed to Texas Eastern Transmission Corp. late last month when a check for \$143,027,000 was handed to Robert M. Littlejohn, War Assets administrator.

Under the leadership of its president, R. H. Hargrove, Texas Eastern hopes soon to transmit approximately 433 million cubic feet of Texas natural gas a day to the northeast.

Convention Calendar

DECEMBER

- 1-5 •American Society of Mechanical Engineers, Annual Meeting
- 4 •P.U.A.A. Winter Meeting, Advertising Club, New York
- 10-13 •National Fire Protection Association, Statler Hotel, Washington, D. C.

1948

JANUARY

- 21-24 •A. G. A. Home Service Workshop, Congress Hotel, Chicago, Ill.

FEBRUARY

- 2-6 •Eighth International Heating and Ventilating Exposition, Grand Central Palace, New York (A. G. A. will exhibit)
- 22-26 •National Association of Home Builders, Stevens Hotel, Chicago, Illinois (A. G. A. will exhibit)

MARCH

- 18-19 •New England Gas Association, Annual Meeting
- 24-26 •Southern Gas Association, Annual Meeting, Galveston, Texas
- 29-31 •Mid-West Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

APRIL

- 5-7 •G.A.M.A. Annual Meeting, Drake Hotel, Chicago, Ill.
- 7-9 •A. G. A. Sales Conference, Industrial & Commercial Gas Section, Windsor, Canada
- 8-10 •Gas Meters Association of Florida-Georgia, Hollywood Beach Hotel, Hollywood, Fla.
- 8-10 •Mid-West Gas Association, Annual Meeting
- 12-14 •Joint A.G.A.-E.E.I. National Conference of Electric and Gas Utility Accountants, Hotel Jefferson, St. Louis, Mo.
- 13-15 •Southwestern Gas Measurement Short Course, The University of Oklahoma, Norman, Okla.
- 14-17 •National Restaurant Association Show, Cleveland Auditorium (A. G. A. will exhibit)
- 19-21 •A. G. A. Distribution and Motor Vehicle Conference, Hotel William Penn, Pittsburgh, Pa.
- 22-23 •Indiana Gas Association Convention, French Lick Springs Hotel, French Lick, Ind.
- 28-30 •Missouri Association of Public Utilities, Hotel Jefferson, St. Louis

MAY

- 4-5 •A. G. A. Natural Gas Department, Rice Hotel, Houston, Texas
- 18-20 •Pennsylvania Gas Association, Annual Meeting, Wernersville, Pa.
- 24-25 •A. G. A. New York-New Jersey Regional Gas Sales Conference, Westchester Country Club, Rye, N. Y.
- 24-26 •A. G. A. Production and Chemical Conference, Berkeley-Carteret Hotel, Asbury Park, N. J.
- 27-28 •Natural Gas and Petroleum Association of Canada, General Brock Hotel, Niagara Falls, Ontario

Accounting Section

JOHN A. WILLIAMS, Chairman

L. E. REYNOLDS, Vice-Chairman

WALTER E. CAINE, Secretary

Accountants Launch 1947-48 Program



John A. Williams (left), Niagara Hudson Power Corp., Syracuse, N. Y., and L. E. Reynolds, The Connecticut Light and Power Co., Hartford, direct Accounting Section activities

At its organization meetings at the Carter Hotel in Cleveland, October 8 and 9, the Accounting Section of the American Gas Association evolved a program that promises real benefits to the accountants in the industry.

Chairman John A. Williams, Niagara Hudson Power Corp., Syracuse, N. Y., and Vice-Chairman L. E. Reynolds, The Connecticut

Light and Power Co., Hartford, following their election to office on October 8, indicated that the 1947-48 organization was planning a most fruitful year.

Immediately following the election of officers at the general session luncheon on Wednesday, Coordinator Alan A. Cullman (Columbia Engineering Corp., New York) of the General Accounting Activities Group and Coordinator Arthur W. Fyfe (Consolidated Edison Co. of New York, Inc.) of the Customers Accounting Activities Group assisted the chairman and vice-chairman in organizing and launching the 1947-48 program.

On Wednesday, October 9, the individual A. G. A. committees met with the corresponding committees from the Edison Electric Institute to appoint joint project committees for the studies they had elected to undertake. Their findings will be presented at the national conference of the Electric and Gas Utility Accountants at St. Louis in April 1948 or at the thirtieth annual convention of the American Gas Association at Atlantic City in October.

Following is a brief outline of the subjects to be covered:

J. C. Cross, Hope Natural Gas Co., Clarks-

burg, W. Va., chairman, General Accounting Committee, announced that the following project committees had been appointed: Underground Storage, Pay Roll Distribution, Protection and Preservation of Records, Machine Application for General Accounting, Use of Simplified Financial Statements, Internal Auditing, Functional or Responsibility Accounting, Improvements in Annual Reports, Accounting Allocation for Regulatory and Other Purposes, and Ten Years of Accounting under the Federal Power Commission Uniform System of Accounts.

The Property Records Committee, of which H. J. Rustad, Equitable Gas Co., Pittsburgh, Pa., is chairman, elected to undertake the study of six highly important and timely subjects, namely: The Use of Trial Unit Prices in Pricing Units of Property, Reconciliation of Office Quantity—Records with Field Inventories—(How often should verification be made?), Unit Costs—(To what extent are companies generally grouping items into one unit cost as well as grouping components of construction costs for property records), The Problem of Providing Construction Accounting Forces with Accounting Personnel on Major Construction Projects, Unitizing General Equipment,

General Accounting Activities Group



Alan A. Cullman, Coordinator



J. C. Cross, Chairman, General Accounting Committee



H. J. Rustad, Chairman, Property Records Committee



G. B. Herr, Chairman, Materials & Supplies Committee



J. S. Phillips, Vice-Chairman, Materials & Supplies Committee



Frank Freer, Jr., Chairman, Taxation Accounting Committee

N.A.R.U.C. Accounting Interpretation in Case E-114, Capitalization of Administration and General Expenses Applicable to Construction.

The Materials and Supplies Committee, with G. B. Herr, The Peoples Natu. J Gas Co., Pittsburgh, Pa., reappointed chairman and J. S. Phillips, The Ohio Fuel Gas Co., Columbus, O., appointed vice-chairman, announced that they would continue their efforts toward the Standardization of Packaging, along with the furtherance of study concerning Purchasing and Stores Accounting, Purchasing Operations and Stores Operations and Equipment.

Frank Freer, Jr., Public Service Electric and Gas Co., Newark, N. J., chairman, Taxation Accounting Committee, revealed that although a more definite program would be established during the winter, his committee's tentative plans included the study of Application of Negative Taxes, Deduction of Taxes Paid Versus Tax Accruals or Tax Equivalents, Trends in State and Local Taxes, Possible Legislation with Respect to the Application of Depreciation Rules as Outlined in the Virginia Hotel Case, Problems Concerning Abnormalities under Section 711 of the Internal Revenue Code and Relief Provisions under Section 722 of that Code.

The Employee Relations Project Committee of the Customer Relations Committee has been elevated to the status of an independent committee. This change in organization was guided by the fact that personnel and employee relations activity has assumed more and more importance in the accounting departments of the electric and gas utilities. This committee will, as did its predecessor, work in close cooperation with the A. G. A. Personnel Committee. It will operate under the guidance of both the General Accounting Activities and the Customer Accounting Activities Groups and has drawn its committee members from both of these groups. Edward R. Eberle, Public Service Electric

Simulated Federal Income Tax Return

● Copies of a "Simulated Federal Income Tax Return (Including Supplementary Depreciation Schedules)" of a hypothetical "Elgas Company (on Behalf of Itself and its Affiliated Companies)," are now available at American Gas Association headquarters.

This return, prepared for the Taxation Accounting Committees of the A. G. A. and the E. E. I., consists of 100 pages, including introduction and narrative description, as well as a complete set of schedules, and illustrates most of the methods and procedures necessary in compiling a utility federal income tax return.

Price: \$1.00 a copy

MAKE CHECKS PAYABLE TO AMERICAN GAS ASSOCIATION.

Purchasers within greater New York City limits please add New York City sales tax when remitting with order.

Address all requests to Walter E. Caine, secretary, Accounting Section, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

and Gas Co., was appointed chairman and J. F. Farley, New York State Electric and Gas Corp., Ithaca, vice-chairman.

Following the assembly of this committee, Mr. Eberle announced that his committee would undertake the study of Employee Performance Rating because of its timely and wide-spread interest to all utilities.

George I. Simpson, The Peoples Gas Light

and Coke Co., Chicago, Ill., chairman, Customer Accounting Committee, announced that his committee would undertake as projects for the coming year: Administration of Fuel Adjustment Purchase in Electric and Gas Rates, Recent Development in Tabulating Card Accounting and Billing, Meter Reading Instruction Manuals, Publication of Accounting Equipment and Methods Development, Study of Accounting Office Production Controls and Costs, Review of Suggested Definitions of Customers and Classifications of Service.

The Customer Collections Committee of which C. W. Tobey of The East Ohio Gas Company is chairman, will undertake projects concerning The "Why" of Collection, Residential Deposits—Are they necessary?, Adequate Pay Stations and their Effect on Collection, Pet Collection Procedures, and the Elimination of Residential Meter Deposits.

A comprehensive and ambitious schedule has been decided on by the Customer Relations Committee, according to its chairman, E. M. Alt, Northern Indiana Public Service Co., Gary. The various project committees will present papers covering Analysis of Zone Patronage of Business Offices, Manuals for Customer Contact People, When do we Have to Say "No" to Customers?, the Further Study and More Specific Recommendations on Accounting Forms which Go to Customers, Manuals for Customer Guidance, Techniques of Customer Sampling, Experience with Closing Offices on Saturdays, and the Coordination of Advertising with Other Publicity Which Reaches the Public with Actual Services Rendered.

L. E. Reynolds, chairman of the Classification of Accounts Committee, announced that his group as in the past will work hand-in-hand with the Wisconsin Public Service Commission on their proposed Uniform System of Accounts.

Accounting Employees Relations Committee



Edward R. Eberle,
Chairman



J. F. Farley,
Vice-Chairman

Customer Accounting Activities Group



Arthur W. Fyfe,
Coordinator



George I. Simpson,
Chairman, Customer
Accounting Committee



C. W. Tobey, Chair-
man, Customer Col-
lections Committee



E. M. Alt, Chairman,
Customer Relations
Committee

Residential Gas Section

C. S. STACKPOLE, Chairman

W. M. JACOBS, Vice-Chairman

F. W. WILLIAMS, Secretary

School Kitchen Replacement Plan



Corner view of home economics kitchen at Two Rivers, Wis., shows up-to-date equipment



A. G. Bur

MY company serves north-eastern Wisconsin. In some areas we serve electricity only, in others gas only, and in some of our principal cities we serve both gas and electricity. The fact that we had 59 high schools, vocational schools and colleges teaching home economics demanded of

us some action to modernize their equipment and to keep it modern.

After three years of counseling with manufacturers, dealers and school authorities, there evolved a plan for annual replacement of equipment in home economics kitchens. Our conclusions were that an annual replacement plan better suited the problem in our corner of Wisconsin than any other type of

Abridgement of talk presented during home service round-table at A. G. A. convention.

BY A. G. BUR

Sales Manager, Wisconsin Public Service Corp., Green Bay, Wisconsin

plan, and at the same time our calculations proved it to be the most economic from the standpoint of all concerned.

Studying the problem as we did, we found many important reasons why we as a utility company should take the active leadership in establishing some form of modernization plan, whether it be annual or otherwise. We found these ten important reasons:

(1) We all know that a habit, a principle or a preference is easily acquired as a child and is seldom forgotten. This simple truth seemed to us to virtually constitute a mandate to always have modern equipment in our teaching institutions.

(2) Our experience with infrequent and irregular attempts at modernization proved inadequate.

(3) We realized also that if we didn't

keep the teaching equipment in homemaking departments constantly up to date, competition would do the job for us.

(4) Children and teachers deserve the best and most modern equipment. You wouldn't expect them to use textbooks which were 20 or 30 years old, but I regretfully admit that gas ranges in a few of our schools fell in those age brackets.

(5) As many students as possible should have the opportunity to learn how to cook and otherwise keep house with modern appliances and to become familiar with the fuel we wish to sell. Perhaps more important, the ease and convenience of automatic gas cooking will show more students the virtues of cooking at home.

(6) We want the children to yearn for modern appliances—now in their parents' homes and later in their own homes.

(7) Modern equipment makes home economics instruction more popular—hence, home economics departments will enlarge, particularly if the equipment is furnished economically.

(8) An economical modernization plan encourages small schools, which do not now have homemaking departments, to establish such departments.

(9) Manufacturers, jobbers and dealers deserve local leadership in bringing to our schools the best equipment in their lines.

(10) A modernization plan which frequently brings equipment up to date provides increased contact opportunities for our home service personnel.

For these reasons we put into operation early in 1946 our Home Economics Kitchen Replacement Plan, which is explained in a question and answer booklet.

In substance, the plan offers appliances to the schools, to be used only for class instruction, at 50 percent of the regular retail selling price, with the understanding that every year thereafter each appliance will be replaced without any cost whatsoever to the school. The dealers are given equal opportunity to participate in the plan and the schools have complete freedom of choice in the selection of brands of equipment.

The greater majority of manufacturers have cooperated by allowing a larger discount on equipment to be used for school instruction purposes. In general, the addi-

tional allowance has been somewhere in the neighborhood of ten percent.

Another factor which helps the economics of the plan is that the schools are exempt from the manufacturers' excise tax and in placing their orders for ranges and other equipment they file exemption affidavits. This contributes another sizable amount to the right side of the ledger in making the plan economically sound.

The contract with the school is generally written for a period of four to ten years, although it can be cancelled at any time the school wishes to do so. A similar contract is made with the dealer under which he furnishes the equipment to us at approximately half of the retail price and we, in turn, bill the school and connect the appliances to the piping facilities furnished by the school.

dealers recover enough money at the end of each year to easily pay for the new equipment which is to go into the school for the following year. The recovery is more than ample to take care of delivery and connection.

The advertising value and prestige gained for the appliances used in the schools are considerable, and the dealers who are interested in future sales are most ready and anxious to get their equipment into the schools. The same, of course, is true of the manufacturer and the jobber. In some cases where the manufacturer does not allow a special discount, the jobber has taken it upon himself to forego his normal profit to see his equipment used in the schools.

Each year when the equipment is placed in service, our home service representatives check the appliances to make sure that they

ment. This is easily accomplished by the school returning the original appliance to the dealer, who will return the purchase price, and of course the dealer is then free to sell the appliance as he chooses. The school is also free to enter into a new replacement agreement for another brand of appliance.

In the administration of this plan, it is always our aim to provide fully automatic ranges when they are available.

The response to this modernization program has been both excellent and enthusiastic from virtually all concerned. Of our 59 school homemaking departments, 37 or about 65 percent have already purchased equipment under the plan. Only one school is not interested and the remaining 21 schools have indicated that as soon as funds are made available they will modernize their departments.

Several schools, because of the attractiveness of the plan, have expanded their departments. In one case, a high school which did not previously have a home economics department has put one in because of the simplicity and economy of the plan. Two other small high schools are contemplating doing likewise within the next year.

Contacts on the sale of equipment under the plan are handled by our sales supervisors. Our home economists are called in for advice on department planning or selection of equipment. Our Home Economics Kitchen Replacement Program has produced a lot of interest in some of the newer appliances and a number of our schools have for the first time installed gas clothes dryers and automatic cycle washers.

We are now in the second year and our experience with this plan enables us to say that our organization is justifiably 100 percent in favor of it and that it is ideally suited to the conditions in our territory. We take a lot of pride in the fact that this plan has not only contributed to our own welfare as a utility, but something very worthwhile has been done for the schools, the teachers and the students.

The image shows two overlapping sample contracts. The top contract is titled "KITCHEN REPLACEMENT PLAN" and the bottom one is titled "HOME ECONOMICS". Both are "Self-Service Agreement with Whittaker Public Service Corp." and contain detailed terms and conditions for the replacement of kitchen appliances. The contracts include sections for "Name of Appliance", "Price to Purchaser", and "Name of Supplier". They also contain numbered clauses detailing the agreement, including the school's obligation to pay for the replacement of the appliance, the supplier's obligation to provide the appliance, and the school's obligation to maintain the appliance in good working order.

These sample contracts for schools and dealers appear in a special question and answer booklet which the utility has published to explain its school kitchen replacement plan

Irrespective of the brand or brands of appliances it chooses, the school looks to us entirely for the continuity of the plan. We make the arrangements each year to provide the equipment, whether it comes from our own stores or through dealers.

After the close of each school year the old equipment is taken out and sold and the new equipment is connected before the opening of the fall term. We have found that teachers and other school employees are most anxious to buy the removed equipment, which is less than a year old and usually well taken care of.

During the present market situation our experience is that this equipment can be resold at not less than 85 percent of list price. In ordinary times we believe an appliance ten months old will always bring 75 percent of its list price. In other words, we or the

are functioning properly and give preliminary instruction to the home economics teachers. Usually during one of the first class periods after school opens, one of our home economists explains the use of the equipment to the entire class. The annual replacement plan increases these very desirable home service contacts with the teachers and also with the students.

One question frequently asked is, "Suppose the school selects an appliance more valuable in some succeeding year?" This may be due to preference or to rising prices. On this point the contract stipulates that if the replacing appliance has a retail value more than ten percent greater than the replaced appliance, the school will pay half of such increase in the retail price.

Sometimes the question is asked whether it is possible during the term of the contract for the school to change the brands of equip-

Home Service Aids Food Program

KATHARINE FISHER, while head of the Consumer Service Section of the recent Citizens Food Committee, Washington, D. C., expressed her appreciation of the active cooperation of gas industry home service directors throughout the country in helping to make the committee's food conservation program a success.

Home service directors were encouraged recently to send recipe material and other conservation literature to Miss Fisher for use in preparing a daily press release or "Peace Plate."

Following is an excerpt from Miss Fisher's recent reply to Jessie McQueen, American Gas Association home service counsellor:

"Thank you for your fine cooperation. We have already heard from a number of your home service directors who have sent us in some very useful information. We do appreciate this."

Committee Plans Home Service Work



A. G. A. Home Service Committee meeting in Chicago to discuss plans for the new year

THE Home Service Committee of the Residential Gas Section, American Gas Association, met in Chicago, October 27, with Elizabeth J. Lynahan, home service director, The Peoples Gas Light & Coke Co., presiding as committee chairman. Nineteen members attended to discuss projects in the new year's plan of work.

The committee will sponsor a national A. G. A. Home Service Workshop at the Congress Hotel in Chicago, January 21-24, 1948, for home service representatives, sales managers and others in the gas industry, including manufacturer representatives. The program will cover all phases of home service operation including demonstrations, gas and equipment explanation and promotion with special consideration to applications for newcomers in home service work.

The outgoing committee, under the chairmanship of Mrs. Mary Belle Burnett, home service director, The Cincinnati Gas and Electric Co., made available the following booklets: "Third Revision of Home Service Home Calls" (20 cents);—"Home Service Training On The Job" (ten cents), and "Home Service Spotlights The Automatic Gas Range" (ten cents). The latter booklet was prepared to fit in with the current "Gas Has Got It" campaign.

A publication on "Home Service Activities" will be available early in 1948 as one of the booklets of the home service manual and a companion piece to "Home Service Home Calls."

Shown in the above picture of the Home Service Committee are: (front row left to right) Mrs. Ruth Johnston, Iowa-Illinois Gas & Electric Co., Davenport, Ia.; Mrs. Winnell Simmons, Houston Natural Gas Co., Houston, Texas; Elizabeth J. Lynahan, The Peoples Gas Light & Coke Co., Chicago, Ill.; Ruth Severson, The Peoples Natural Gas Co., Pittsburgh, Pa.; Mrs. Pauline Treisch, The Tappan Stove Co., Mansfield, Ohio.

Second row: Mrs. Joan Hodgdon, A. G. A.

Testing Laboratories, Cleveland, O.; Celia Bush, Estate Stove Co., Heatrola Div., Noma Electric Corp., Hamilton, O.; F. M. Rosenkrans, The Gas Service Co., Kansas City, Mo.; Clara Ridder, Servel, Inc., Evansville, Ind.; J. E. Humphreys, The Ohio Fuel Gas Co., Columbus, O.; Jessie McQueen, American Gas Association, New York; Helen Kirtland, The Ohio Fuel Gas Co., Columbus, Ohio.

Third row: Thelma Holmes, Alabama Gas

Co., Montgomery, Ala.; Claudia Brandt, The Gas Service Co., Kansas City, Kan.; Beatrice Cole Wagner, The Philadelphia Gas Works Co.; Eleanor Morrison, Michigan Consolidated Gas Co., Grand Rapids, Mich.; Dorothy O'Meara, The Bridgeport Gas Light Co., Bridgeport, Conn.; Mrs. Mary Belle Burnett, The Cincinnati Gas & Electric Co., Cincinnati, Ohio.

Present but not in picture: B. T. Franck, Milwaukee Gas Light Company.

Other members of the committee not present at meeting: Julia Hunter, Lone Star Gas Co., Dallas, Texas; Ardis Hubbs, Minneapolis Gas Light Co.; Mrs. Rita Calhoun, Portland Gas & Coke Co., Portland, Ore.; Irene Muntz, Rochester Gas & Electric Corp., Rochester, N. Y.; Gladys B. Price, Southern California Gas Co., Los Angeles, Calif.; Margot Whitmire, Springfield Gas Light Co., Springfield, Mass.; W. D. Williams, Public Service Electric & Gas Co., Newark, New Jersey.

Home Service Workshop

A BROAD program is being prepared for the American Gas Association's Home Service Workshop in Chicago, January 21-24.

The program committee, headed by Elizabeth J. Lynahan, chairman, A. G. A. Home Service Committee, is preparing an agenda with an unusually large number of topics covering all phases of home service activity.

Please make reservations with Daniel Amico, sales manager, Congress Hotel, Chicago, Illinois.

Minneapolis Lions Build Model House



In full public view is this sign before Minneapolis Lions Club model house proclaiming "Another nationally advertised New Freedom Gas Kitchen is being installed here"

THE newest and best in New Freedom Gas Kitchens is being installed by the Minneapolis Gas Light Co. in the attractive new Lions Club model house which will be opened to the Minneapolis public in the near future.

A comprehensive publicity and promotional campaign has been planned for the opening and a New Freedom Gas Kitchen Certificate

has been presented to the club. The kitchen will include a modern gas refrigerator, new automatic gas range, 30-gallon gas water heater, and special cabinets and ventilation equipment.

After the showing to the public the model house will be sold and proceeds used towards maintenance of the Lions Club camps for under-privileged boys.

Industrial & Commercial Gas Section

LEON OURUSOFF, Chairman

BET JARD T. FRANCK, Vice-Chairman

MAHLON A. COMBS, Secretary

Gas In Spotlight at Metal Show



The Association's letters "guard" a large mechanical flame mounted on pylons in the center of the Combined Industrial Gas Exhibit

MORE visitors passed through the American Gas Association's Combined Industrial Gas Exhibit than any other single area of the 1947 National Metal Exposition in Chicago's International Amphitheatre, October 18-24. The A. G. A. had the heaviest exhibition traffic largely because its 6,000 square foot area spanning three aisles opposite the main entrance was the largest single exhibit of the entire show.

The Association's exhibit area was bordered on the long sides by eight square columns with connecting stringers at the top which carried on both sides appropriate legends on the uses and advantages of gas in industry. The familiar A. G. A. color scheme, dark blue lettering on white, was used throughout.

In the center of the area, the top connecting sections on each side curved gracefully to a group of two pylons with the letters "A.G.A." near the top over a large mechanical flame. At eight other points around the exhibit mechanical flames served as beacons which could be seen from every point of the hall.

Around the center pylons was an attractive lounge in the main aisle which was divided to provide a flow of traffic around each side. Uniform carpeting over the entire exhibit area including the three aisles served further

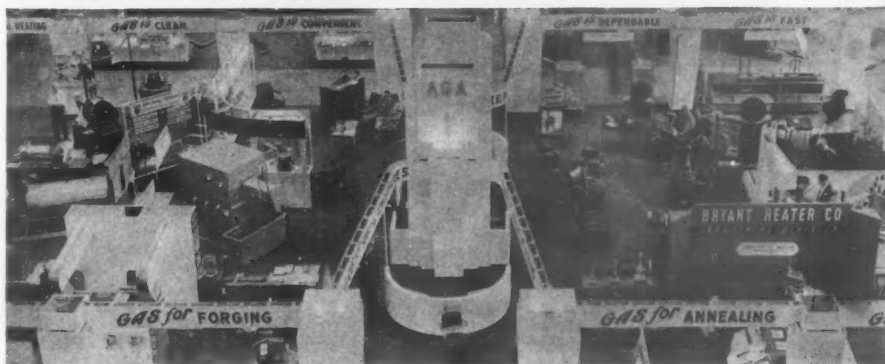
to tie all the individual exhibitors together into the largest and finest Combined Industrial Gas Exhibit ever sponsored by the Industrial and Commercial Gas Section. This opinion was stated repeatedly by the eleven manufacturers of industrial gas equipment who co-operated in making the gas industry phase of the Metal Show a success.

Several of the exhibitors had "live" displays to demonstrate their burners and other equipment items. Coming up with unique displays were the Partlow Corp., which employed a series of thermocouples over small gas burners to operate their various control devices, and the Sels Corporation of America which used a working model of their continuous high-speed heat treating furnace through which steel rods of varying composition (in sizes from 1/8 to 5/16 inches) were

processed at temperatures up to 1800° F. in ten seconds.

The Bryant Heater Co. showed a furnace chamber set-up in which six different burners were installed. Visitors to their exhibit could push buttons to operate the various burners at will. American Gas Furnace Co. demonstrated their many burner tips which produce special flame patterns for specialized work. Charles A. Hones, Inc., had two small furnaces, one a muffle type and the other a semi-muffle type operating at 2000° F. and 1600° F. respectively on atmospheric burners.

There was also a demonstration table on which several types of burners were displayed and lit as occasion required. The Eclipse Fuel Engineering Co., and Gas Appliance Service, Inc., had some of their equipment in service and the C. M. Kemp Mfg.



Two views of the Association's 6,000 square foot Combined Industrial Gas Exhibit

Co. demonstrated their gas carburetor. Surface Combustion Corp. had their revolving gas chemistry symbol, new dew point recorder which was set to register the moisture content of the air in the exhibition hall, and an attractive display of precious metals illustrating heat treating processing of gold, silver and platinum in jewelry manufacturing.

An industrial immersion heated steam boiler was the main piece of equipment shown by Sellers Engineering Company. The Lithium Co. exhibited a demonstration forging furnace together with their prepared atmosphere generator, the gas from which flows

over a lithium capsule to introduce lithium into the furnace atmosphere.

Some additional manufacturers of industrial gas and allied equipment who were represented in other areas of the exposition with equipment on display in a lounge area were: Baker & Co., Inc.; Brown Instrument Co.; Burdett Mfg. Co.; Despatch Oven Co.; Foxboro Co.; Holcroft & Co.; Illinois Testing Laboratories, Inc.; Intercontinental Engineers, Inc.; Minneapolis-Honeywell Regulator Co.; Peters-Dalton, Inc.; Sunbeam Corp., and Wheelco Instruments Company.

The official greeting of the American Society for Metals was extended to the breakfast group by Kent R. Van Horn, past-president of the A.S.M., after which the speaker of the morning, Gerald E. Stedman, was introduced. Mr. Stedman, a widely known writer and lecturer in the industrial heating field, gave an inspiring talk to the more than 125 guests assembled in the South Ballroom of the Hotel Stevens.

Speaking on the topic "What's Ahead for Industrial Gas," he stated that in spite of present material shortages and curtailments in various sections of the country, gas men should look ahead into the future and prepare now for the time when there will be a need to sell industrial gas again.

He extolled the engineering abilities of industrial gas men and gave them full credit for the present wide-spread use and acceptance of gas wherever heat is required for manufacturing or processing. He said that the most important phase of industrial gas is in its infancy—gas chemistry for heat treating in all its forms by means of prepared atmospheres of the many types now available for different results on both ferrous and non-ferrous products.

It is the province of the industrial gas engineer, Mr. Stedman declared, to explore the possibilities of gas utilization in industry, do the necessary advance engineering to adapt the uses of gas and modern industrial gas equipment to new manufacturing and processing techniques in order that production costs may be lowered and a better product result.

Many fields, Mr. Stedman stated, have barely been touched by industrial gas, particularly in powdered metals, plastics, textiles, radiant heating and in continuous processing to replace batch operations. Industrial gas can be geared to continuous operations and in this and other lightly touched fields offers a wide range of opportunities—"a tremendous and very real opportunity for personal advancement, if you are alert."

Tenth Annual Industrial Gas Breakfast



Head table guests at the 1947 Industrial gas breakfast: (left to right) Karl Enmerling, The East Ohio Gas Co., Cleveland; Gerald E. Stedman, writer and guest speaker, New York; Leon Ourusoff, Section chairman; Kent R. Van Horn, who extended official A.S.M. greetings to the breakfast group, and Carl Wierum, chairman, A. G. A. Metals Committee

A CAPACITY group of industrial gas men, equipment manufacturers and editors of metals publications sat down to the Industrial Gas Breakfast of the Industrial and Commercial Gas Section, American Gas Association, during Metal Show week in Chicago, Wednesday, October 22.

The meeting was the tenth anniversary of these breakfasts, and the presiding officer, Leon Ourusoff, chairman of the Industrial and Commercial Gas Section, paid tribute to Eugene Milener, former Section secretary, who founded and carried on this popular and traditional affair.



Industrial gas men, equipment manufacturers and editors of metals publications enjoying the tenth annual industrial gas breakfast



One proof of the trend toward gas was the large number of orders placed with gas equipment manufacturers during the National Hotel Exposition

Record Crowds View Hotel Show

Gas Association's largest Combined Commercial Cooking Exhibit attracts much attention as 16 cooperating manufacturers receive numerous orders for the various gas appliances displayed

MORE than 125,000 persons visited the National Hotel Exposition at Grand Central Palace, New York, November 10-14, and to eye-witnesses it appeared as if every one of those thousands passed through the Combined Commercial Cooking Exhibit sponsored by the American Gas Association.

For five days the 4,000 square foot display was crowded by visitors anxious to view the latest commercial gas cooking equipment. As a result, the 16 cooperating manufacturers shared in the most successful hotel exposition in the history of the industry. Numerous orders were taken for various gas appliances exhibited, including heavy duty and restaurant ranges, counter appliances, deep fat fryers, pressure cookers, gas-fired steam kettles, warming tables and toasters.

Due to the ability of gas equipment manufacturers to promise anywhere from immediate to reasonable delivery dates, an air of new activity was noticeable at the exposition. More interest was displayed in bright metal equipment than ever before and a spokesman for one large range manufacturer stated that in five years the black range would be obsolete.

Although this was the largest commercial exhibit ever sponsored by the Association there was not sufficient room for all the equipment manufacturers who wish to join in the A. G. A. space. Consequently many manufacturers were scattered throughout the four floors of this largest hotel exposition but drew as much attention as those in the combined exhibit.

Without exception the exhibitors in the combined commercial cooking exhibit voiced an enthusiastic approval of the A. G. A. motif which tied in the whole area with gas slogans telling why "almost everybody cooks with gas."

Companies cooperating in the combined exhibit were: American Stove Co.; Anetsberger Brothers, Inc.; The G. S. Blodgett Co., Inc.;

The Cleveland Range Co.; Detroit-Michigan Stove Co.; Duke Mfg. Co.; Groen Mfg. Co.; Hart Mfg. Co.; Lyons-Alpha Products Co., Inc.; MagiKitch'n Equipment Corp.; J. C. Pitman & Sons Sales Corp.; Robertshaw-Fulton Controls Co.; Savory Equipment, Inc.; Specialties Appliance Corp.; Standard Gas Equipment Corp., and Stephen Norton Engineering Company.



Some of the manufacturer exhibits which attracted heavy attention at the hotel show

Traffic Heavy at National Hotel Show



Part of the record crowds which viewed the latest in commercial gas cooking equipment

Midwest Industrial Gas Council Meets



Donald R. Groff (left), vice-chairman, Northern Indiana Public Service Co., Hammond, Ind.; Vance Uhlmeier (center), chairman, Iowa-Illinois Gas & Electric Co., Moline, Ill., and Paul F. Gibson, secretary-treasurer, Western United Gas & Electric Co., Aurora, Illinois

IMMEDIATELY following the Industrial Gas Breakfast sponsored by the American Gas Association on Wednesday, October 22, a meeting of the Midwest Industrial Gas Council was held in the Hotel Stevens, Chicago, with Vance Uhlmeier, Iowa-Illinois Gas & Electric Co., Moline, Ill., presiding. Well over 100 members of mid-western gas companies attended.

The first speaker was Charles E. Thomas, assistant to president, Lithium Co., Newark, N. J., who presented an interesting paper, "A Discussion of Protective Atmospheres for

Metallurgical Use." Mr. Thomas' talk raised many questions on the present and future uses of metallic lithium in the heat treating field.

The meeting was resumed after lunch with a fine paper by H. J. Shaner, district manager, Refractory Division, Babcock & Wilcox Co., Chicago, Ill., on "Refractories and Forging Costs."

Roger W. Jackson, vice-president, Western Products Co., Inc., Chicago, as the final speaker presented a well-prepared paper on "Plaster and Fibre Board Drying."

GAS PLAYS MAJOR ROLE

(Continued from page 535)

dramatically designed and strategically located information booths contained attendants who handled thousands of inquiries on gas services as well as those pertaining to the Home Show generally.

An institutional animated water heating display emphasized proper sizing of the automatic gas units and a reception area included such facilities as comfortable seating, drinking water and friendly hostess service.

In addition, an array of booths was

devoted to the individual major appliances, equipment, manned and paid for by the respective sponsors.

Appropriate literature from the A. G. A. and participating manufacturers was distributed in each of the component units.

An industry-engineered model home was displayed to the public as a pre-Home Show activity, stimulating interest and attendance at the exposition. Approximately 125,000 persons viewed the home without charge and saw gas efficiently filling the cooking and water heating assignments. Approximately 85,000 persons paid their way into the exposition.

Minneapolis Employee Selection Program

GAS industry management in general and personnel directors in particular should find much of interest in "A Scientific Employee Selection Program," an article by Clifford E. Jurgensen, personnel director, Minneapolis Gas Light Co., which appears in the October issue of *The Conference Board Management Record*.

When the utility determined to centralize hiring and other personnel functions in one department in the summer of 1945, it proceeded on the assumption that test research and development is a continuing process. Results attest to the validity of that principle.

In the first two-year period more than 9,000 tests were given to approximately 4,000 applicants. Mr. Jurgensen states that supervisors have reported favorable results and that improved employment procedures have been instrumental in reducing personnel turnover more than 50 percent in a one-year period.

Could any executive in the gas industry fail to be interested in information which might help to cut his company's employee turnover in half, or even to reduce it a fraction of one-half?

In a comprehensive manner he shows how the Minneapolis utility assured a proper understanding among its supervisors and employees of the "purposes and procedures of the proposed hiring program." He discusses the six-step pattern approach, "successive hurdle" technique, test results and use of custom-built tests.

In closing he adds, "Scientific selection procedures are grossly inefficient when compared with the ideal, but are highly efficient when compared with commonly used employment procedures."

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Technical Section

A. C. CHERRY, Chairman

S. J. MODZIKOWSKI, Vice-Chairman

A. GORDON KING, Secretary

Extension of Gas Service



E. S. Pettyjohn

THE possibilities in the extension of utility gas service should not be obscured by the large amount of publicity being given to our fuel reserves. The emphasis given to coal as a basic raw material for fuel and gas supplies may cause the gas industry to overlook opportunities for extension

of its service.

While it is true that 98 percent of our mineral fuel resources are in coal, this reserve is so enormous that the 0.2 percent which is allotted to oil and 0.2 percent which is allotted to natural gas provide enormous quantities of gas-making materials. This 0.2 percent, and estimated 20 billion barrels, is said to be an adequate supply for 20 years and the 0.2 percent as natural gas represents some 174 to 200 trillion cubic feet which will provide adequate gas supplies for some 30 years. The marketed production of fuels and related materials for the year 1944 is shown in Table I.

In 1925, the anticipation of an oil shortage led to the development of the by-product gas oven and the construction of these units in many utility properties in the north central states. This oil shortage did not develop and these plants have subsequently been written off and torn down to make way for natural gas. This illustration is cited to emphasize the fact that while now, as then, our ultimate reserves are in coal, the immediate future lies in utilizing natural gas and petroleum derivatives to the industry's best advantage.

The enormous expansion in utility gas service in the last 18 years has been due to the construction of high pressure pipelines which have permitted the transmission of natural gas from the reservoirs in the mid-continent area to the large metropolitan areas and more recently to within a reasonable approach to the eastern seaboard.

This extension has been due to the demonstrated fact that a therm of heat energy can

BY E. S. PETTYJOHN

Director, Institute of Gas Technology,
Chicago, Illinois

be purchased and transported more economically as 1,000 B.t.u. natural gas than as a solid or liquid fuel. The availability of this high heating value gas had made it possible for gas companies to capture markets both industrial, commercial and domestic which were not obtainable with lower heating value gases which were manufactured from more costly raw materials.

For many years, the manufactured gas man producing his base load from by-product oven gas and his peak loads from carburetted water gas has sought to capture the house heating market at times in competition with his own by-product coke. These attempts were largely unsuccessful due to both the high cost of production and to the even relatively higher cost of distribution. The availability of natural gas demonstrated the reduction in distribution costs which could be obtained when higher heating value gases at

higher pressures were transmitted through the same distribution system.

The ability to capture this house heating market has been due partially to the increased level of income within the United States which has enabled the customers' desire for clean, economical and readily available heat to be translated into a demand for house heating. This demand will continue as long as the wage levels are maintained and during the period when the price situation is so markedly favorable to gas. The fact that gas may be purchased on a therm basis for less out-of-pocket cost than coal or oil is a factual demonstration of the economies of natural gas production and transmission as compared with the production and distribution of solid fuel.

In certain localities where through historical background high B.t.u. gas has been distributed for a protracted period and where natural gas is available and underground storage within a reasonable distance, the house heating saturation is in excess of 90 percent. In these areas, there is no question in the mind of the utility companies' executives that this market shall be served. In

TABLE I—MARKETED PRODUCTION OF FUELS AND RELATED MATERIALS FOR THE
YEAR 1944

| | Weight (Thousands of Short Tons) | Heat Value (Trillions of B.t.u.'s) | Volume | |
|---|---|--|----------------------------|------------------------------|
| | | | (Billions of Cu ft.) | (Thousands of Barrels) |
| Total Coal (Anthracite and Bituminous) ¹ | 683,315 | 17,697 | — | — |
| Petroleum (Total Crude) ² | 257,198 | 10,066 | — | 1,677,744 |
| Natural Gas ³ | 92,555 | 4,115 | 3,829 | — |
| Motor Fuel ⁴ | 92,232 | — | — | 732,000 |
| Carbon in Produced Natural Gas ⁵ | 69,416 | — | — | — |
| Total Organic Chemicals ⁶ | 7,000 | — | — | 41,667 |
| Non-Coal Tar Organic Chemicals ⁷ | 5,000 | — | — | 29,762 |
| Liquefied Petroleum Gas ⁸ | 2,160 | 89 | 29 | 21,562 |
| Carbon Black ⁹ | 400 | — | — | — |

¹March 1945 "Survey of Current Business," U. S. Department of Commerce Bureau of Foreign and Domestic Commerce. Assuming for anthracite—13,600 B.t.u. per lb. and for bituminous—13,100 B.t.u. per lb.

²Mineral Industry Surveys, U. S. Department of Interior, Bureau of Mines, Dec., 1944 issue. Assuming 7.3 lb. per gal. and six million B.t.u. per bbl.

³From Table 2. Assuming 48.35 lb. per M cu.ft. and 1.075 B.t.u. per cu.ft.

⁴Assuming two million barrels per day, density six pounds per gallon.

⁵Assuming carbon content of natural gas 75 percent by weight.

⁶Based on data from Chem. & Met. Eng. 52, 130 (1945). Assuming eight lb. per gal.

⁷Includes chemical products of agriculture, products prepared from calcium carbide, petroleum chemicals, liquefied-gas chemicals and chemical derivatives of natural gas. Does not include chemicals produced for use in aviation fuel or explosives and other chemicals made at government ordnance plants or private units producing under ordnance control. Data from Chem. & Met. Eng. 52, 130 (1945). Assuming eight lb. per gal.

⁸From Table 4. Assuming 4.77 lb. per gal., 32 cu.ft. of gas per gal., and 98,000 B.t.u. per gal.

⁹Calculated on the basis of 800 million pounds of channel and furnace black, Mineral Market Report No. MMS, U. S. Dept. of Interior, Bureau of Mines, June 26, 1945.

Reference: *Pet. Refiner*, 25, 98 (1946) January.

Presented at A. G. A. convention in Cleveland, October 7, during joint meeting of the Manufactured Gas Department with the Technical Section.

other localities where historical background has been one of the production of gas from coal, coke and oil, and where underground storage is not available and where the production of peak load gas can only be accomplished through costly means, utility companies have limited their acceptance of house heating loads.

Until quite recently, this limitation was of little concern as the public had believed that gas was out-priced in the domestic fuel market, but the penetration of natural gas into these same areas has forced a change in this attitude. Today these same people are anxious to exercise their desires for gas for house heating and the utility company is the reluctant party to servicing this demand.

This reluctance is due to the extremes of load produced by the acceptance of the house heating which is potentially available. These peaks are so enormous relative to the base load that it will require the use of every combination of methods of production, distribution and storage that the gas engineers have or can devise. The current solutions to these peak load problems all are dependent on the continued availability of natural gas condensates or petroleum fractions and require ingenuity in handling these materials in one or more of several methods. The selection of method and of materials will depend upon the type or types of gas being distributed by the utility and by the organization of the production and distribution systems.

The simplest system is one in which natural gas is distributed and in which sufficient quantities are available from the pipeline to meet the total requirements at any one time. This unusual situation is only available near the natural gas fields. The more remote companies must resort to one or more of the following:

Underground storage
High pressure storage

Hydrate storage Liquefied storage

(The storage capacities for various fuels is presented in Table II.)

Or to the production of a substitute gas such as:

Propane air gas
Butane air gas
Catalytically cracked hydrocarbon gas
High B.t.u. oil gas

Of the above methods, only underground storage has been developed to any widespread usage. Storage as hydrate is still in an experimental stage. Storage of liquid, while costly, has been developed as a practical operating method and will see further utilization. Storage at high pressures up to 2,240 psig. is past the experimental stage and a 40 million capacity plant is being installed by a utility company in the middle west.

The use of propane air and butane air mixtures was reviewed in a publication prepared by the Institute of Gas Technology for the American Gas Association Post-War Planning Committee as a result of a project supported by the Technical Section of that committee. The process has demonstrated its simplicity and reliability during the last seven years and its acceptance has been almost universal within the gas industry. It does have several disadvantages in that, to produce a completely substitutable gas requires an increase in heating value varying from 700 B.t.u. when substituted for manufactured gas to 1,450 B.t.u. when substituted for natural gas and that the admission of large quantities of air in certain distribution systems may induce gum formation and internal corrosion.

It has a further disadvantage in that due to its increased gravity it changes the combustion characteristics of appliances and in-

creases the hazards due to leakage or outages. The production of a substitute high B.t.u. oil gas is past the development stage and is in operation at several points on both the East and West coasts.

In the majority of these installations only intermediate gravity petroleum residues are used due to excessive carbon deposition when heavy residuums are substituted. The use of these lighter fractions increases the cost of gas making due to the higher raw material cost.

Your Gas Production Research Committee has studied these problems carefully and diligently during the past three years and has instituted several research projects in an attempt to develop the necessary facts from which new processes may be evolved and has or will carry forward pilot-plant demonstrations of the processes which appear most favorable.

To overcome the disadvantages mentioned above in the use of propane or butane air mixtures the catalytic cracking of light hydrocarbons is being prosecuted in a pilot plant in the Tilghman Street Gas Plant of the Philadelphia Electric Co., Chester, Pennsylvania. In this unit tests have been run using propane, butane and refinery gas as charging stock for reforming into a blue water gas or carrier gas to be subsequently enriched with propane or butane to the desired heating value. These gases, due to their CO₂, CO, H₂ and N₂ content and to their comparable gravity are readily interchangeable with the manufactured gas or natural gas for which they may be substituted.

This work is to be continued to develop the possibility of the use of lower pressure vapor hydrocarbons as the charging stock to the catalyst chamber so as to reduce both the cost of raw material and of storage of the hydrocarbons required for making the reformed carrier gas.

The results of this work to date have already indicated that the initial capacities estimated for catalyst cracking chambers can be markedly increased when reasonable amounts of air are added to the steam-hydrocarbon mixture so as to retard sulfur poisoning and carbon deposition and to provide a part of the internal heat required in the endothermic reaction between the hydrocarbon and steam.

The Gas Production Research Committee is also sponsoring the test on the Hall regenerative heavy oil high B.t.u. gas process at the Spring Gardens Plant of the Consolidated Gas Electric Light and Power Co. of Baltimore, Maryland.

In this test, two three-shell machines will be converted into a single four-shell unit by cross-connecting the tops of the carbureters of the two sets and by blocking off the generators. The units will then become a twin carburetter, twin superheater set which will permit reverse blasting and carbon burn-off with resultant economies in both fuel consumption in heating and in steam decomposition due to regeneration during the make.

These two processes when successfully demonstrated will permit the production of large quantities of intermediate or high B.t.u.

TABLE II—STORAGE CAPACITIES FOR VARIOUS FUELS

| Fuel | Conditions of Storage | Heat Value/cu.ft. | Equivalent Storage as Natural Gas |
|---------------------|-----------------------|--------------------|-----------------------------------|
| (1) Natural Gas | as gas | 1,000-1,050 B.t.u. | 1 cu.ft. |
| (2) Natural Gas | as hydrate | 167,000 B.t.u. | 167 cu.ft. |
| (3) Natural Gas | as liquid | 600,000 B.t.u. | 600 cu.ft. |
| (4) Natural Gas | as gas | 238,000 B.t.u. | 238 cu.ft.* |
| (5) Normal Propane | as liquid | 683,000 B.t.u. | 525 cu.ft. ¹ |
| (6) Normal Butane | as liquid | 770,000 B.t.u. | 550 cu.ft. ² |
| (7) Gas Oil | as liquid | 980,000 B.t.u. | — |
| (8) Bituminous Coal | as solid | 625,000 B.t.u. | — |

¹Computed at 1,300 B.t.u.—due to increased sp.gr. of propane-air mixtures.

²Computed at 1,400 B.t.u.—due to increased sp.gr. of butane-air mixtures.

*24 in. seamless molybdenum pipe—40 ft. long—1½ in. expansion bend.

| Types of Storage | Pressure | Temperature |
|---|------------|---------------|
| (1) Standard water seal lift or waterless holders | atm. | atm. |
| (2) Well insulated alloy steel spherical holders | atm. | minus 146° F. |
| (3) Well insulated alloy steel spherical holders | 3 psig. | minus 257° F. |
| (4) Bomb type storage | 2250 psig. | atm. |
| (5) Cylindrical—1½ in. to 1¼ in. CS welded tanks | 100 psig. | atm. |
| (6) Cylindrical—¾ in. to ¾ in. CS welded tanks | 40 psig. | atm. |
| (7) Cylindrical—¼ in. to ¾ in. CS welded tanks | atm. | atm. |
| (8) Open stock piles | atm. | atm. |

gas with relatively low investment cost accompanied by short starting up periods and relatively low material and labor costs. The catalytic cracking units will also permit the location of small integrated units, semi or completely automatic at strategic points in the distribution system which will permit the feeding back of a completely substitutable gas from points in outlying districts which now may only be served through looping the distribution system.

The ability to make gas of any heating value either through the catalytic cracking of light hydrocarbons or the production of intermediate or high B.t.u. oil gas has given an improved flexibility to utility companies which formerly did not exist. Combinations of the various processes permit an almost indefinite expansion in the peak loads which may be served.

Where natural gas is also available on a limited basis, this gas may be used in a variety of means in order to extend gas service. Thus natural gas may be used for cold enrichment of by-product coke oven gas, of blue water gas, producer gas or air depending upon the demand on the distribution system. The carrying capacity of the

TABLE IV—ILLUSTRATIVE BALANCE ON U. S. HYDROCARBON FUEL SUPPLY FROM COAL

| | |
|---|--------------------------------------|
| Assuming synthesis plants would operate to produce both gaseous and liquid products at following yields per ton of coal: | Gas 7,000 cu.ft. Liquid 2.1 bbls. |
| *Net U. S. coal reserve expressed as bituminous equivalent | 1,760 billion tons |
| Deduct reserve of solid coal for 1,000 years at 600 million T/yr. | 600 billion tons |
| Net available for synthesis | 1,160 billion tons |
| Prospective Gas Yield—1,160 billion tons x 7,000 = 8.1 quadrillion cu.ft. or 2,000 yrs. supply at present consumption rate (4.1 trillion cu.ft. per year). | |
| Prospective Liquid Yield—1,160 billion tons x 2.1 = 2,440 billion bbls. or 1,350 years' supply at present liquid fuels consumption rate (1.8 billion bbls. per year). | |

*From testimony before U. S. Senate, War Minerals Subcommittee, August 4th, 1943. net is based on total mineable reserve of 3,178 billion tons all classes of coal and lignite, as of Jan. 1, 1942, converted to bituminous equivalent (13,000 B.t.u./16) and assuming recovery of 69 percent.
Reference: Gas Age, p. 64, September 5, 1946.

system will be increased in direct proportion to the heating value of the gas distributed providing the specific gravity is held constant.

This flexibility of natural gas is also available in a lesser degree with propane, butane or high B.t.u. oil gas. The experiences of manufactured gas companies in the middle west in utilizing natural gas to upgrade

coke oven and water gas to 600 and 800 B.t.u. for distribution has clearly demonstrated the advantages in the use of higher heat value gases in increasing the thermal capacity of the distribution system and in lowering distribution costs per therm.

These experiences are available in the literature of the gas industry so that specific examples will not be mentioned here. Within the last three months the marked advantages of higher heating value gas on distribution costs have been further emphasized in the action of a New England gas company in making high B.t.u. oil gas for production and distribution. In every case, employment of the higher heating value gases has resulted in increased gas sales, increased flexibility and an extension of gas service to the public. These extensions will not be complete nor will the gas industry's problems be solved until every customer has been supplied all of the gas service which he desires without any restriction other than price.

While the eventual source of gas will be in solid fuel, the gains which have been made by the gas industry through the employment of higher heating gases, either natural or produced from liquefied petroleum products or petroleum fractions, will be retained for many years. The current advocates of coal as a raw material for both oil and gas production all believe that our oil resources are adequate for 20 years on the basis of present-day consumption.

These estimates all come from outside of the gas industry as in a majority of instances the gas utilities do not own the sources of their own raw materials but are dependent upon producers of natural gas and petroleum or both. The largest consumers of petroleum and liquefied petroleum products are the large refinery companies which control the major production of oil within the United States and with this the production of substantial quantities of natural gas.

These same companies have the opportunity to extend our petroleum resources through improved refinery practices and through the importation of crude petroleum. With substantial investments already made in the Saudi-Arabian oil fields with estimated reserves of some 20 billion barrels it would appear that through importation of crude oil our resources could be extended an appreciable

(Continued on page 572)

TABLE III—COMPETITIVE COST OF MIDDLE EAST AND EAST TEXAS OIL F.O.B. NEW YORK

(Middle East oil via Suez Canal)

Middle East

| | <i>Per Bbl.</i> |
|---|-----------------|
| Production Cost..... | \$0.10 |
| Royalty average..... | .21 |
| Tanker from the Persian Gulf to New York via Suez Canal. Present-day, modern tanker, foreign officers and crew..... | .61 |
| Loading cost..... | .02 |
| Present tax on imported oil from countries having "friendly nations' contracts"..... | .10½ |
| Toll charge through Suez Canal..... | .13 |
| Total out-of-pocket cost..... | \$1.17½ |
| Difference in refinery realization against Arabian oil..... | .20 |
| Total out-of-pocket competitive cost f.o.b. New York..... | \$1.37½ |

East Texas

| | <i>Per Bbl.</i> |
|--|-----------------|
| Market price..... | \$1.25 |
| Gathering charge, published rate..... | .05 |
| Pipe line to Gulf, published rate..... | .10 |
| Loading at Gulf..... | .02 |
| Tanker to New York. Present-day, modern tanker, American crew. Foreign crews cannot operate coastal vessels..... | .20 |
| Total f.o.b. New York..... | \$1.62 |

COMPETITIVE VALUE OF MIDDLE EAST AND CALIFORNIA OIL F.O.B. LOS ANGELES REFINERIES

Middle East

| | <i>Per Bbl.</i> |
|---|-----------------|
| Production cost..... | \$0.10 |
| Royalty average..... | .21 |
| Tanker from the Persian Gulf to Los Angeles refineries. Modern tanker, foreign officers and crew..... | .61 |
| Loading cost..... | .02 |
| Present tax on imported oil from countries having "friendly nations' contracts"..... | .10½ |
| Total out-of-pocket cost..... | \$1.04½ |
| Difference in refinery realization against Arabian oil..... | .20 |
| Total competitive cost..... | \$1.24½ |

Kettleman Hills 38 Gravity

| | <i>Per Bbl.</i> |
|---|-----------------|
| Market price..... | \$1.33 |
| Gathering and pipe-line transportation costs..... | .17 |
| Total f.o.b. refinery..... | \$1.50 |



Laboratories

ARTHUR F. BRIDGE, Chairman

EDWIN L. HALL, Director

Heavy Duty Cooking Equipment Research

RESearch on application of power burners to contemporary types of gas food service equipment is well-advanced at the American Gas Association Testing Laboratories. Sponsored by the A. G. A. Committee on Industrial and Commercial Gas Research, a literature survey on the subject has been completed. It presents a discussion of advantages and disadvantages which may be expected on the basis of present experience, as well as analysis of the direction to be taken in future research on the subject. Published as Research Report No. 1090, the study is being followed by laboratory work using a heavy duty solid top range.

Experimental work under way is directed along lines of supplying all air for combustion by power—as 100 percent primary air—even though a power system requiring some secondary aeration might afford some advantages over present design. By initially exploring 100 percent forced aeration with atmospheric burners adapted to the purpose it is felt that a technical groundwork can be laid which may be of assistance in prosecuting further studies.

Continuation of the work contemplates substitution of original burner equipment with already developed and proven industrial type burners of similar capacity and other expedients suggested by research results. Design of burners for specific applications is considered a final step which may well be left to interested manufacturers once the possibilities of power burner application have been established and appraised.

Gas Water Heating Report Available

RECOMMENDING separate research to obtain technical data which could be used to attain a minimum practical fluctuation of temperature of hot water delivered from automatic gas storage water heaters, Research Report No. 1086 of the American Gas Association Testing Laboratories reviews literature presently available on the subject.

The review shows that additional research will be necessary to correlate past studies of

such factors as method of introducing cold water, inlet water temperature, flue design, input rating, size and shape of tank, rate and schedule of draw-offs, standby losses, and cycling. It also charts temperature fluctuations in the water at the top of 14 heaters on standby test. This study was sponsored by the A. G. A. Committee on Domestic Gas Research.

Proposed Requirements Revisions Published

FIVE sets of proposed revisions to American Standard requirements for gas appliances and accessories recently were published by the American Gas Association Testing Laboratories. Seven technical reports on various requirements investigations were also completed and distributed to interested committees. The revisions have been distributed to the industry for comment and criticism while

the reports are scheduled for committee consideration at November meetings.

Revised requirements before the industry for comment cover domestic gas ranges, hot plates and laundry stoves, gas appliance pressure regulators, automatic main gas-control valves and low water cut-off devices. Completed reports deal with operation of ranges, space heaters and water heaters on high heating value butane-air gases; effects of attaching duct work to unit heaters; temperature of unit heater elements; proposed simplification of efficiency tests for warm air furnaces and technical improvements in the method of test for operation of space heaters under conditions of a diminished oxygen supply.

Committees scheduled to meet during November are the water heater, space heater, central heating and unit heater groups. The range and conversion burner committees are also expected to meet in the near future to act upon simplification of range requirements and adoption of installation requirements for conversion burners respectively.

Conner Honored by Laboratories Staff



H. Carl Wolf, A. G. A. managing director, and Edwin L. Hall, newly appointed director of the Laboratories, are interested onlookers as K. R. Knapp, assistant director, presents wrist watch from Laboratories staff to R. M. Conner, who recently assumed other duties after guiding the testing organization from its founding in 1925

FOLLOWING are excerpts from a letter recently received at American Gas Association Headquarters from R. M. Conner, recently retired as director of the A. G. A. Testing Laboratories.

"I am fortunate in being able to turn over to my successor more cash than we started out with 22 years ago and two very fine Laboratories representing undepreciated assets of approximately \$560,000. More important, I believe, even than these two items is the splendid staff that has been assembled over the years.

"I have always felt that the Laboratories represented one of the outstanding examples of industry self-regulation in the customers' behalf. They are, in my opinion, a monument to the unselfishness of the gas business and an everlasting tribute to the judgment and cour-

age of our leaders who, of course, were responsible for their foundations."

Southern Counties Installs New Holders

SOUTHERN COUNTIES GAS CO., which pioneered in the development of the high pressure storage holder for natural gas, reports that it is the first company on the Pacific Coast to introduce a new type of gas storage unit.

The gas company is installing new storage units utilizing the same type of 30-inch high strength expanded pipe used on Biggest Inch.

Each of the units will have approximately 250,000 cubic feet capacity with a working pressure of 440 psi. The tanks will be laid parallel underground and manifolded together.

Personal and Otherwise

Dr. Chaney to Direct Gas Production Research



Dr. N. K. Chaney

DR. NEWCOMB K. CHANEY, for the past 12 years director of research for The United Gas Improvement Co., Philadelphia, has been appointed to direct the Gas Production Research Program of the American Gas Association, effective November 1, according to an announcement by H. Carl

Wolf, managing director of the Association. Dr. Chaney takes charge of the work previously directed by Edwin L. Hall who has been appointed director of the Association's Testing Laboratories at Cleveland and Los Angeles.

As part of a greatly enlarged research and promotional program now in its fourth year of operation, the Association is engaged in a continuing program of research to find better and more economical ways to produce gas. In pursuit of this objective, gas production research projects are now under way at the A. G. A. Laboratories, in utility plants, and at a number of universities, scientific and governmental institutions outside the industry. Dr. Chaney's work is to coordinate and guide these activities.

Well-Qualified

Dr. Chaney is well-qualified to conduct this important gas industry program, having spent his entire career on similar work. A graduate of Carleton College with a B.S. degree in 1904, he received his M.S. degree in chemistry and physics in 1905. From 1907 to 1910, he was a Rhodes scholar at Oxford University, and he received his Ph.D. degree at the University of Pennsylvania in 1911.

After leaving the University of Pennsylvania, Dr. Chaney spent 25 years with the National Carbon Co., unit of the Union Carbide and Carbon Corp., first as research chemist and later as assistant research director.

In 1935, Dr. Chaney became research director of The United Gas Improvement Co.

to organize an extensive research program on oil pyrolysis for the production of high B.t.u. gas together with the associated hydrocarbon products and chemical intermediates. These developments became known under the general term of the "Ugite Process." Some 200 process and product patents resulted from this work in the following ten-year period.

As a result of the special contributions of this research group to the synthetic rubber program during World War II, they were represented in the group of companies which received the Award for Distinguished Chemical Engineering Achievement in 1945.

During World War II, Dr. Chaney acted as chemical consultant for the Office of Scientific Research and Development. He holds the Howard N. Potts Medal for his work in World War I on activated carbon and in 1940 received one of the Modern Pioneer Awards of the National Association of Manufacturers for inventions of outstanding industrial and economic importance over the previous 20-year period.

During the first World War, Dr. Chaney was assigned to the U. S. Bureau of Mines' war gas investigations working on the problem of gas mask carbon. Later as section chief of the Carbon Unit of the Defense Division of the Chemical Warfare Service, he was technical adviser to the Gas Defense and Development Divisions in that service. He was later appointed consulting engineer of the Chemical Warfare Service.

He is a cooperating expert of Vol. II of The International Critical Tables, the author of numerous technical articles and a member of many scientific societies.

Scott Appointed Burkay Official



A. F. H. Scott

ALLISON F. H. SCOTT has been appointed vice-president in charge of sales of the Heating Products Division of The Burkay Co., Toledo, Ohio.

Mr. Scott's early association in the heating business has been with the American Radiator Co. as assistant eastern sales manager, Anthracite

Industries Inc. as assistant to president, and Hoffman Specialty Co. as vice-president and general sales manager.

From 1934 to 1937 he was loaned to the Federal Housing Administration, Washington, as special assistant to the deputy administrator. In the fall of 1941 he became principal consultant to O.P.A. in Washington, on loan from the Hoffman firm. Upon completion of war service Mr. Scott returned to reorganize Hoffman's Warm Air Products Division.

Burkay will introduce a new line of hot water "packaged" boilers for 1948.

G.A.M.A. Posts Awarded To Dupin and Pender



P. E. Dupin



M. W. Pender

PAUL E. DUPIN has been appointed assistant treasurer of the Gas Appliance Manufacturers Association and Marc W. Pender has been elected chairman of G.A.M.A.'s Marketing Committee for the 1947-48 association year. R. T. Killian is the new vice-chairman of the committee.

Mr. Dupin assumes the duties of Kenneth F. Muldoon now with Gas Refrigerator Distributors, Inc., New York. Mr. Dupin was formerly associated with the Production Department of the Square D Co., Elmhurst, L. I., and previous to that did design and development work at the Frankfort Arsenal in Philadelphia.

Mr. Pender is manager of American Stove's Market Research Department and during the war was the company's Washington representative on war contracting. Former vice-chairman of G.A.M.A.'s Marketing Committee, he succeeds Bradford Corbin, manager of market research, The Coleman Co., as chairman.

Mr. Killian is manager of market development and research at Bryant Heater.

The Marketing Committee, composed of leading market research men, was appointed by the board of directors early in 1947. The group studies the marketing needs of the industry and accordingly formulates the program for the guidance of the G.A.M.A. Statistical Department.

One of the most recent projects of this committee has been the introduction of sales data compilation on a trading area basis.

Gignilliat to Assist South Atlantic President

THE appointment of William R. Gignilliat as assistant to the president of the South Atlantic Gas Co., Savannah, Ga., a new post for the development of natural gas uses in south Georgia and north Florida, has been announced by H. Hansell Hillyer, president.

Mr. Gignilliat has a thorough background in natural gas production, distribution and transmission. He was vice-president and secretary of the Southern Natural Gas Co. and affiliates at the time he entered service in World War II.

McManus Named Georgia Power President



C. B. McManus



Dan MacDougald

C B. McMANUS, vice-president and director of operations of the Georgia Power Co., Columbus, Ga., has been elected president of the company succeeding the late Preston S. Arkwright, Jr. Dan MacDougald, senior member of the law firm of MacDougald, Troutman, Sams & Branch, was elected chairman of the board of directors.

John A. Sibley, president and chairman of the Trust Co. of Georgia, was elected to membership on the board of directors.

Mr. McManus joined Georgia Power in 1927 as superintendent of district operations, after spending a number of years in various important managerial positions in public utility operations. He became assistant operating manager in 1929. He has served as vice-president and director of operations of the Co. and has been a director since 1945.

Mr. MacDougald as a member of the law firm of Colquitt, MacDougald, Troutman and Arkwright which subsequently became MacDougald, Troutman, Sams & Branch, has for the past 12 years been closely associated with the power company in the handling of its legal affairs.

Mr. Sibley is widely known as an attorney as well as the chief officer of the Trust Co. of Georgia. He joined the firm of King and Spalding, which later became Spalding, MacDougald and Sibley in 1918 and was there associated with the new chairman of the board for a number of years.

Dominion and Republic Superintendents Promoted

FRANK D. HOWELL, division superintendent of the North Dominion District, the Dominion Natural Gas Co., Ltd., has been promoted to division superintendent of the consolidated North Dominion and St. Thomas Districts in the southwestern part of the Province of Ontario.

Mr. Howell has been with Dominion or its Cities Service associates over 20 years and is a past-president of the Canadian Gas Association. The new high B.t.u. oil-gas plant to be located at Port Stanley will be under his supervision.

Lyle D. Burdick, formerly Division Superintendent at St. Thomas, has been promoted to Division Superintendent of the Niagara Falls District of the Republic Light, Heat &

Power Co., Inc., an associate company. Mr. Burdick has been with the company or its associates over 20 years.

Henderson Retires From East Ohio Gas Co.

CHARLES T. HENDERSON, well-known in gas company and newspaper circles in the Cleveland area, entered retirement effective November 1.

Mr. Henderson joined The East Ohio Gas Co. April 11, 1921 as advertising manager and has served in that capacity ever since. Prior to that time he was associated with the Cleveland *Plain Dealer*, becoming what has been described as one of the most colorful city editors in the more than 100 year life of the newspaper.

At a meeting in the directors' room October 22 the entire staff of *The East Ohio News* paid tribute to Mr. Henderson, their former editor.

Mr. Henderson was active in American Gas Association publicity and advertising work.

Melone Fills Post at Citizens Gas & Coke



J. A. Melone

J A. MELONE has been appointed director of Industrial and Personnel Relations of the Citizens Gas and Coke Utility, Indianapolis, Indiana, in order to further coordinate and develop these activities in the utility's various plants and offices.

Mr. Melone has had a broad and varied experience in personnel and other related fields. He was formerly editor and publisher of the *Dodge County Republican* in Minnesota and came to Indianapolis as personnel director for Peerless Pump Division of Food Machinery Corporation. Prior to coming to Indianapolis, he established a personnel department for Peerless Pump at Quincy, Illinois.

Hulcy Appointed to Petroleum Committee

TWO Texans have been appointed to a National Petroleum Council committee which will make recommendations for governmental action to conserve petroleum products or increase their availability. D. A. Hulcy, president, Lone Star Gas Co., Dallas, and H. C. Wiess, Humble Oil & Refining, Houston will work on the group.

Walter S. Hallanan, chairman of the N.P.C., said the committee was named at the instance of Secretary of Interior J. A. Krug, who sought an industry study of the petroleum supply situation, which he said "had deteriorated rapidly."

Elizabeth Lynahan Heads Home Service Group



E. J. Lynahan

APPPOINTMENT of Elizabeth J. Lynahan, home service director of The Peoples Gas Light and Coke Co., Chicago, as chairman of the American Gas Association Home Service Committee has been announced by C. S. Stackpole, A. G. A. Residential Gas Section chairman.

Miss Lynahan graduated in home economics from Cornell University, was affiliated for a short time with the Empire Electric and Gas Co. in Geneva, then joined the home service department of Peoples Gas in 1934. She was appointed district supervisor in 1938 and home service director of the company in 1944.

Home service celebrated its twenty-fifth anniversary in the Chicago company in the summer of 1946.

Miss Lynahan is well-known to Chicago women and has built a particular reputation in large audience demonstrations, both in the company's home service auditorium and in district theaters throughout the city.

The utility's department operates under the name of "Martha Holmes," and the slogan "Call Martha Holmes" is carried in much of the company's advertising. An imposing switchboard manned daily by at least four members of the home service department, answers thousands of calls on all phases of homemaking.

Davis Advances at Equitable Gas



W. E. Davis

WILLIAM E. DAVIS has been appointed assistant general sales manager, Equitable Gas Co., Pittsburgh, Pa., according to an announcement by Ray Little, general sales manager. His office will be at 610 Wood Street, Pittsburgh.

Mr. Davis was graduated from Carnegie Institute of Technology's School of Fine Arts in 1934, with a B.A. degree in architecture. He entered the employ of the utility in April, 1935, and has since served in various sales capacities, as heating layout designer and trade development representative; in engineering capacities, as supervisor of architects and builders service, and supervisor of trade and dealer relations, the position he held at the time of his present appointment.

Amberg and Heard Advance At Houston Natural



J. Fortune Amberg

J. FORTUNE AMBERG has been promoted to general sales manager of the Houston Natural Gas Corp., Houston, Texas, effective November 1.

Mr. Amberg affiliated with the Houston utility in February 1937, following his graduation from the University of Oklahoma. He was office manager for the company at Corpus Christi in 1942. Following four years in the navy, he returned to the company as a member of its Residential and Commercial Sales Department and was made head of that department in October 1946.

Also effective November 1, E. N. Heard will succeed Mr. Amberg as residential and commercial sales manager in charge of the Houston division. Mr. Heard has been associated with Houston Natural since June 1928 and as its manager of new business has become widely known in local real estate circles.

Hardesty Named Chicago Personnel Director

C. C. JOLLEY has resigned as personnel director of the Natural Gas Pipeline Co. of America, Chicago, and D. A. Hardesty has been appointed his successor, effective November 1. Mr. Hardesty will also continue his present position as superintendent of Right of Way.

Effective the same date, A. G. Barkow will be responsible for material inspection such as pipe, pipe bends, pipe fabrication, vessels, valves and fittings, welding and welding techniques. He will be available to assist the operating departments with their welding and metallurgical problems.

C. S. Kenworthy, assisted by H. W. Shubring and O. S. Seim, will be responsible for the plant inspection of the Worthington and Cooper main engines.

Schmidt in A. P. I. Post

E. LMER F. SCHMIDT, vice-president, Lone Star Gas Co., Dallas, is one of 14 Texans named to the general committee of the division of production, American Petroleum Institute.

WOMEN HAVE IDEAS

(Continued from page 534)

blood run cold. There were too few of the other people who saw the other side. They were not sufficiently interested. To be sure by the end of the week the manufacturers, retailers and business were present and democracy did come into action, but that first session certainly showed the indifference of the average woman.

Where are we in our lectures and in our columns? Have we moved away from the giving of recipes, menus, suggestions? No, indeed! While we are teaching the art of wise and good consuming, while we are teaching respect and consideration of our corner grocer and meat dealer, we can also be teaching the fun and the art of cooking. We home economists, nutritionists and dietitians are often accused of being interested only in scientific methods and the nutritional effect of foods. We know the accusations are false and untrue so let's prove it. Let's prove that there is fun in the art of cooking.

An article in the September issue of the Journal of the American Dietetic Association entitled, "A Matter of Good Taste," says: "Good Taste in food does not necessarily mean high food cost. It

comes with skill in preparation, a fine sense of seasoning, good choice in combinations and good style in color and arrangement. These qualities apply to the least expensive and simplest foods as well as the most costly dishes. Luxury in food is not measured in dollar value alone but in the delight, satisfaction and enjoyment it gives."

I wonder if that is not the secret of our conservation program. We know that not everyone is going to save for the pleasure of saving and so we must develop the idea that it is fun to save and fun to share foods.

On the subject of recipes, I wonder if you are not finding as we are that while we have been using standard measurements and accurate methods, the women expect that recipes be completely explanatory. Sometimes it seems to me we have inserted every comma and period needed to make a recipe clear, and then we are called and asked: "Why didn't you say this in your recipe?"—or, "I did not understand that."

I inherited a column of recipes written for the beginner when I came to the *Plain Dealer* some 17 years ago. It was called "Patty Pans." When I came along we held a contest and the Merry Mixer name was evolved.

The Merry Mixer column is 16 years old now—a young lady. It has grown from the stage of a club of young girls meeting to make fudge to a column giving recipes, sometimes marketing suggestions and storage suggestions in detailed form. We are proud that the Merry Mixer Cook Book was the first cook book to make the best seller list. We are proud that we are still giving out the recipes. The secret of its success, I believe, is undoubtedly due to the fact that we give recipes in detail. We tell why a certain step is followed and we select our recipes with the greatest of care.

Our Merry Mixer followers are not only bobby soxers, if they are still in style, but they are prospective brides, they are mothers of growing children and they are grandmothers. We mail out the recipes and our readers call for them.

You and I meet Mrs. Homemaker and we work with her. We have the greatest respect for her and we have a great responsibility to her. Woman's part in the world's affairs is an important part today. You and I have a very definite role to fulfill. These are serious times; they are challenging times, so let us be sure to meet them to the best of our ability.

Food Editors Shown Efficiency of Gas

THE American Gas Association sponsored a fast-moving program during the fourth annual meeting of the Newspaper Food Editors' Conference in New Orleans in October.

The food editors at the week-long meetings represented 73 of the best-known newspapers in the country and manufacturers who sponsored the programs represented various food companies and food trade associations. A. G. A. was one of two equipment groups asked to participate.

George A. McDonald, director of publicity, introduced the speaker, E. Carl Sorby, vice-president, Geo. D. Roper Corp., Rockford, Ill., who ably demonstrated the efficacy of gas equipment to the editors. The background on the stage was dramatized with a Town and Country automatic gas range and a gas refrigerator with visual charts pointing up automatic, cool-and-clean operating features of both gas ranges and refrigerators.

George H. Smith, director of the A. G. A. Natural Gas Department, James I. Gorton, director of "CP" Promotion, Gas Appliance Manufacturers Association, and Jean Clarke Thompson of A. G. A. were present to answer questions about gas equipment after the meeting.

Obituary

PRESTON S. ARKWRIGHT, JR., president of the Georgia Power Co., Columbus, Ga., died in Washington, D. C., Thursday, November 6.

Mr. Arkwright was born in Atlanta November 26, 1902. He graduated from Emory University with a bachelor of philosophy degree in 1924 and a law degree in 1926. He was admitted to the bar and joined the law firm of Colquitt and Conyers. This firm, which served as general counsel for the power company, later became Colquitt, Parker, Troutman and Arkwright, and in 1937 became MacDougald, Troutman and Arkwright, by which name it was known until Mr. Arkwright resigned to become president of the utility.

Through this professional connection and through his close relationship with his father, he became familiar with the company's operations and policies. He also became one of Atlanta's most successful trial attorneys.

Following the death of Mr. Colquitt, the major responsibility as general counsel for

the power company devolved on Mr. Arkwright's shoulders.

In 1939 he was elected a director of the Georgia Power Co. and on February 18, 1947 became president, succeeding to the position that had been held for more than 40 years by his father.

About eight years ago he was stricken with arthritis. The disease was a severe handicap during the following years, but he bore the pain with great cheerfulness.

Mr. Arkwright leaves his wife and two daughters. He was a member of the American, Georgia and Atlanta Bar Associations, the Atlanta Lawyers Club and the Atlanta Chamber of Commerce.

PHILLIPS B. SHAW, president, Arizona Edison Co., Inc., died in Phoenix, Ariz., November 10. Mr. Shaw had been connected with public utilities since 1920.

From 1923 to 1925 he was operating vice-president of the National Electric Power Co. and affiliated companies. He then became vice-president and director of the power company, and then president of the North American Gas and Electric Co., from which post he came to Arizona.

From 1936 to 1943 Mr. Shaw was also managing director of the Ohio Service Holding Corp., and subsidiaries. He was a member of the American Gas Association.

SOLVING THE HOUSE HEATING PROBLEM

(Continued from page 544)

were they going into the railroad car business? The answer was an emphatic no! . . . that it was a research project to help General Motors sell its goods by helping us get good transportation. This is just one illustration of how enterprising and surviving American industries lead the world in accomplishment.

Time and again the statement is made by our business leaders that the problem of management is to produce more goods and services for satisfying people's wants at prices more people can afford to pay. I agree with this and further appreciate that it is not a job for just a few men in big companies. It is up to all of us who are responsible for operating any size or kind of business, for in our democratic economy all businesses add to the over-all economy.

What Is the Score?

What is the score then, or better, "What time is it?" For the gas industry is it getting late and is our clock running down? Do we need new jewels, a main spring or a balance wheel? Whatever it may be, I am sure that we in the gas industry can keep it ticking again so that we can open the doors wide and let in all the waiting Joe Smiths and another generation of employees to serve them. Whatever needs to be done to get us over the immediate hurdle should and must be done if we are to obtain and retain consumer confidence.

Now for my prescription and the answer to "What To Do About House Heating."

Obviously, our primary job is to get back in the house heating business in a big way and if we need adventurous men of vision to do it, let us get them before it is too late.

Almost every periodical that crosses my desk these days highlights either the preservation of free enterprise or the importance of public and employee relations. In this job of fighting to keep our economy of free enterprise, the industry must obviously do its share. Our economists do not always agree, but I do not find any disagreement that if we are to maintain full employment the level of production must be kept high. This does not mean just industrials, it means every type of business, large or

Statement of the Ownership, Management, Circulation, Etc., Required By the Acts of Congress of August 24, 1912, and March 3, 1933 and July 2, 1946

Of American Gas Association Monthly published monthly, except July and August. Bi-monthly then; at Brattleboro, Vermont for October 1, 1947.

State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Jac A. Cushman, who, having been duly sworn according to law, deposes and says that he is the Managing Editor of the American Gas Association Monthly and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semi-weekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Gas Association, Inc., 420 Lexington Ave., New York 17, N. Y.; Editor, James M. Beall, 420 Lexington Ave., New York 17, N. Y.; Managing Editor, Jac A. Cushman, 420 Lexington Ave., New York 17, N. Y.; Business Manager, None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

American Gas Association, Inc., 420 Lexington Avenue, New York 17, N. Y.; President, R. H. Hargrove; 1st Vice-President, Hudson W. Reed; 2nd Vice-President, Robert W. Hendee; Treasurer, Edward F. Barrett; Managing Director, H. Carl Wolf (all of 420 Lexington Avenue, N. Y. 17, N. Y.).

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily, weekly, semiweekly, and triweekly publications only.)

JAC A. CUSHMAN, Managing Editor.

Sworn to and subscribed before me this 30th day of September, 1947.

(Seal)

LAWRENCE P. BROWN,

Notary public in the State of New York

Residing in Queens County

Queens Co. Clk's No. 892, Reg. No. 110B-9

Cert. Filed in N. Y. Co. No. 415, Reg. No. 89-B-9

Commission Expires March 30, 1949

small and especially utilities—gas and electric. This means over the next five years plant expansion in a big way. This will require personnel of specialized training.

Where will it come from? From our own ranks or outside the industry? Will we attract talent to our industry if the G.I.'s now completing their education get it in their heads that the gas industry does not wish to grow—that its managements cannot solve their problems—that investments in new plants are too risky?

We talk about employee relations and better educating them to our business. Let us do that but let us also inspire them to the realization that our business has great promise of a future for each one of them. Let us prove it by action and they will be more apt to read our booklets and exhortations and thus take more interest.

Do you not think it is embarrassing to our salesmen to say:—"Sorry, we got plenty of nuthin'!" Any good sales manager will tell you that that song is demoralizing on a sales crew, and what is more it sours your whole organization.

Certainly these statements do not apply to all managements. There are of course enlightened utility managements today spending a lot of money, time and gray matter on retaining their markets and building plants to supply growing new and expanding markets. If your company has such a management, congratulations. You need not fear the future.

Now, let me summarize briefly some further points for your consideration in tackling the house heating problem.

Additional Points

1. You cannot go on telling customers about shortages. Commission is apt to take action.
2. You need research.
3. If house heating load is of such magnitude that you cannot take care of it, restriction might better be by rates, not by edict.
4. Now is the time to consider rate increases—so one does not build up load that will drop off at first business recession.
5. You may be able to increase capacity of distribution system and equipment by increasing thermal value within interchangeability limits.
6. Your customers, during restric-

Independent Natural Gas Group Meets

EVERY phase of the natural gas business came in for a share of discussion at the third annual membership meeting of the Independent Natural Gas Association of America at Oklahoma City, October 24.

The one-day gathering also resulted in the reelection of Joseph Bowes, president of the Oklahoma Natural Gas Co., Tulsa, Okla., as president. Other officers reelected were: Paul Kayser, president, El Paso Natural Gas Co., El Paso, Texas, first vice-president; J. H. Dunn, president, Shamrock Oil & Gas Corp., Amarillo, Texas, second vice-president; F. W. Peters, Oklahoma Natural Gas Co., treasurer, and John A. Ferguson, Washington, D. C., executive director.

Seven members of the board of directors whose terms expired this year were reelected and five officers of local distribution companies added to the board marking the first time that a local distributor has been so represented.

Reelected were: Mark H. Adams, Stevens County Oil & Gas Co., Wichita, Kan.; H. W. Bass, Trinity Gas Corp., Dallas, Texas; J. H. Dunn; D. A. Hulcy, Lone Star Gas Co., Dallas, Texas; E. C. Joulilian, Consolidated Gas Utilities Corp., Oklahoma City, Okla.; F. S. Kelly, Jr., Arkansas-Louisiana Gas Co., Shreveport, La.; and C. H. Zachry, Southern Union Gas Co., Dallas, Texas.

The five new directors are: R. G. Taber, Atlanta Gas Light Co., Atlanta, Ga.; Louis B. Schiesz, Indiana Gas & Water Co., Inc., Indianapolis, Ind.; A. B. Paterson, New Orleans Public Service, Inc., New Orleans, La.;

R. W. Otto, The Laclede Gas Light Co., St. Louis, Mo., and H. K. Wrench, Minneapolis Gas Light Co., Minneapolis, Minnesota.

Papers presented included: the president's report, by Mr. Bowes; "The California Line—Economic and Physical Problems Incident Thereto," by Mr. Kayser; "The Steel Pipe Outlook," by Henry J. Wallace, general manager of sales, National Tube Co., Pittsburgh, Pa.; "Current Legal Problems of the Natural Gas Industry," by Glenn W. Clark, vice-president and general counsel, Cities Service Gas Co., Oklahoma City, Oklahoma.

Also included were: "The Problems of the Distributing Company as Related to Producers and Transporters," read by James S. Motz, secretary, for R. G. Taber, president, Atlanta Gas Light Co., Atlanta, Ga.; "A Royalty Owner Looks at the Gas Industry," by James F. Gray, royalty owner, Dallas, Texas; "Gas for Tomorrow," by Gail F. Moulton, staff geologist, the Chase National Bank, New York; "Synthetic Liquid Fuels and Chemicals from Natural Gas," by George Roberts, Jr., research division, Stanolind Oil & Gas Co., Tulsa, Okla., and "Some Operating Problems of the Independent Producer," by L. T. Potter, assistant to the president, Lone Star Gas Co., Dallas, Texas.

Among resolutions adopted was one petitioning the Congress and the President of the United States to approve legislation renouncing and disclaiming any right, title, interest or claim by the United States Government to the tidelands.

tions, should be told frequently about efforts to make house heating available to them.

7. Maybe we can learn some tricks about serving large house heating concentrations by studying properties having large saturations of it.

8. You may, without question, have to abandon 18-carat (free) servicing policy and start charging for everything.

9. Encourage people to use storm windows, weather stripping, etc.—to keep demand down and hang on to load.

10. Anticipate needs for equipment far in advance. Cannot work on a hand-to-mouth basis.

11. Support Research.

And above all, I beg you to remember:

A customer is the most important person ever in your office—in person or by mail.

A customer is not dependent upon us—we are dependent upon him.

A customer is not an interruption of our work—he is the purpose of it. We are not doing him a favor by serving him—he is doing us a favor by giving us the opportunity to do so.

A customer is not an outsider to our business—he is a part of it.

A customer is not a cold statistic—he is a flesh-and-blood human being with feelings and emotions like our own, and with biases and prejudices.

A customer is not someone to argue or match wits with. Nobody ever won an argument with a customer.

A customer is a person who brings us his wants. It is our job to handle them profitably to him and to ourselves.

And lastly, confidence established through house heating, with its concomitant retention of the cooking, water heating and refrigeration load means confidence in the gas industry by investors and employees.

Long Island Promotion



Long Island Lighting Co. executives enthusiastic over gas model automatic clothes dryer at Bayside meeting of sales and service personnel prior to districtwide promotion. L. to r., J. D. Fleet, Raymond and Sam Scott. William Schmidt, general sales manager, chairman A. G. A. Water Heating Committee

OIL GAS MANUFACTURE

(Continued from page 549)

It required constant work on the lamp-black deposits to keep the oven running. The lampblack eventually fouled the tar flush so that it was difficult to pump and of very inferior quality as a by-product. The gas make was much less from this type run.

One run of 46 hours was made to see if it was possible to shut down to decarbonize every other day. Straight Bunker C Oil was admitted through the oil sprays, and steam was admitted to the oven through one steam spray. There was no pressure trouble until the second day of the run.

The oil efficiency was high but the make per hour was reduced slightly. The decarbonizing time had to be at least an hour longer, as the oven had a larger amount of wall carbon to be removed. The gas main also required a good deal more cleaning.

The cost of making oil gas was covered in the report written by William Lutz in July 1932.

The greatest problem in making oil gas is that of heat transfer. The oil must be cracked and the gas fixed in one chamber, the oven itself. There is no superheater to finish up the job, therefore, it is necessary for the oil vapor to

come in contact with the oven wall bricks to complete the fixing to a permanent gas.

But every bit of carbon which forms on the wall acts as an insulator against heat transfer from the flues, that is why steaming during the run is so helpful. But actual air decarbonization during the shut down is necessary to keep the walls clean. Of course, this decarbonization is bad for the brickwork, alternately cooling and heating it.

The oil itself has some harmful effect upon the brickwork. This is more noticeable on lay brick than silica.

DISTILLATION TESTS:

| Percent by volume | Temperature |
|-------------------|-------------|
| First drop | 260° F |
| 4.34 | 350 |
| 3.25 | 400 |
| 10.30 | 450 |
| 17.35 | 500 |
| 20.00 | 550 |
| 33.66 | 600 |
| 4.35 | 650 |
| 92.23 | Total |

ANALYSIS OF COKE OVEN DRIP OIL: Sp. Gr. 971 Distillation Test

| Percent by volume | Temperature |
|-------------------|-------------|
| First drop | 60 |
| 8.3 | 90 |
| 54.0 | 235 |
| 9.9 | 270 |
| 4.2 | 300 |
| 8.9 | 330 |
| 85.3 | Total |

ANALYSIS OF COKE OVEN OIL TAR:

Emulsion contained 56 percent H₂O
Viscosity Engler, 100 cc at 40° C—616 secs.
Viscosity Engler, 50 cc at 40° C—280 secs.
Sp. Gr. at 25° C 1.097
Sp. Viscosity at 40° C 24.6
Free Carbon (CS) 10.8
Melting point of residue 46° C

Distillation Test:

| Temperature | Percent by volume |
|-------------|-------------------|
| 0° C 170° C | 1.1 |
| 0° C 200° C | 3.9 |
| 0° C 235° C | 8.7 |
| 0° C 270° C | 15.5 |
| 0° C 300° C | 25.4 |

EXTENSION OF GAS SERVICE

(Continued from page 565)

able amount of time beyond the 20 years now estimated. The cost of importation of oil from this large pool is potentially less than the cost of East Texas crude in New York or of Kettleman Hills crude in Los Angeles as shown in Table III.

The withdrawal of oil from this great mid-

dle east pool would be extremely helpful to world peace and to American prosperity as it would permit simultaneously the conservation of our own petroleum resources and at the same time remove a source of strategic raw material which may lead to war. It would not be too fantastic to propose that large quantities of this oil be brought into this country and stored underground if necessary, as a strategic reserve along with other strategic materials which are being impounded against the next national emergency.

This importation and storage would extend our reserves to well beyond the economic life of present-day gas plant investments. The gas industry should not become discouraged by the threatened oil shortage but should continue its highly successful efforts to extend its service to the public.

With the eventuality that both oil and gas will have to be produced from solid fuel within the next 50 years it would appear that the oil companies and the gas companies should consider how to work along with one another so as to conserve the raw materials and the investments of each. More and more gas companies are becoming large purchasers of gas and are producing smaller and smaller increments of their total sendouts.

These companies have become marketers or distributors of gas serving the general public and have filled in a very essential part in the taking of gas from near its source and delivering it to the ultimate consumer. There is no good reason why this practice should not continue as it has proved both economical and profitable to the producer, distributor and customer. Testimony has been presented on a number of occasions to point out that the technology of converting coal to oil and gas is perfectly feasible and that it would be possible to operate a coal conversion plant so as to emphasize gas production in the winter months when the demand for gasoline is relatively low and emphasize gasoline production in the summer months when demand for gas is relatively low.

There is sufficient coal available to last many many years as is shown in Table IV. This is a very logical development and has a distinct appeal to technical and scientific men but the process has not demonstrated its economic practicability in peacetime markets in any country. But to be implemented this plan requires cooperation between the oil companies and the gas companies. If the pattern which has already been established in the purchase of natural gas can be extended to the purchase of "coal refinery" gas then both the gas man and the oil man can join forces in this great development of our fuel resources.

As evidence of good faith in this direction there are many locations where refineries could produce large quantities of high B.t.u. gas and sell this gas to a distributing gas company during periods of peak loads at a price which would be commensurate with the loss of profit on their normal product sales and at a great saving to the gas distributing company by having large reserves of high B.t.u. gas available for the short periods when peak loads make this supply essential.

Cooperation at this time will be very helpful in permitting some of our larger companies to materially extend the amounts of house heating service to their customers without the expenditures of large amounts of capital to create peak load production facilities which would be operated for such small amounts of time as are necessitated by the extremes of winter weather. It would give confidence to utility executives that they could accept these greater house heating loads and so improve their service to the public by cooperation with the oil industry which potentially will provide through enormous coal refinery plants the gas our industry will distribute in the future.

SPECIAL BURNERS IN WATER HEATERS

(Continued from page 542)

burning gases, and the possibility of failing to remain in adjustment due to collection of dust and lint in primary air openings.

In Table 1 a résumé of combustion performance of the burners studied is given. Fig. 5 charts standby loss, service efficiency and thermal efficiency. Burner A in both instances is the reference burner.

It may be seen from the data that reasonably satisfactory performance was obtained with all of the burners even though no effort was made to establish optimum burner location or the effects of modifying heater design. It is particularly interesting to note that totally aerated burner G developed a thermal efficiency of 77.8 percent and a service efficiency of 63.9 percent.

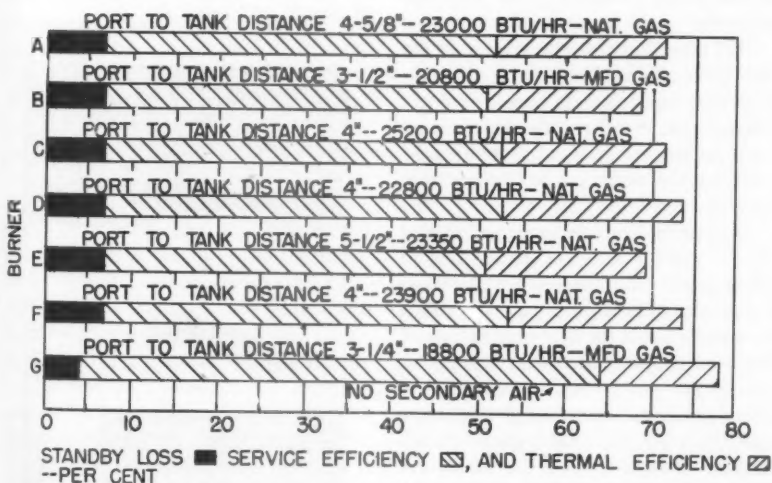


Fig. 5. Résumé of combustion performance for different burners studied

Ebasco Holds Ninth Safety Meeting



Safety directors and operating executives of 20 client companies during Ebasco meeting

SAFETY directors and operating executives of approximately 20 client companies which operate electrical, gas, oil and transportation systems in the United States and Cuba were represented at the ninth annual safety meeting held by Ebasco Services, Inc., in Chicago, October 6-10, in conjunction with the National Safety Congress.

The meeting was sponsored by the Ebasco Insurance Department, I. M. Carpenter, manager. W. T. Rogers, the firm's safety consultant, presided as general chairman of the meetings. W. Dean Keefer, vice-president,

Lumbermens Mutual Casualty Co., was the principal speaker at the luncheon on Tuesday, October 7.

The meeting on Monday, October 6, featured a panel discussion on safety and job training, presided over by W. H. Senyard, personnel director, Louisiana Power & Light Co., New Orleans.

On Wednesday afternoon, W. C. Lounsbury, safety director, Minnesota Power & Light Co., led a round-table discussion on safety and related problems.

FUELS FOR TODAY AND TOMORROW

(Continued from page 540)

available, can have only one meaning, namely that in most natural gas markets we have already reached and passed the price relationship at which gas is in

competitive balance with other fuels, and beyond which, when a free choice can be made, gas will be burned instead of other fuels.

It is true that the United States has tremendous known gas reserves, 148 trillion cubic feet according to the best authority, the American Gas Association committee. It is true that at present rates of consumption these reserves would last some 30 years. It is undoubtedly true that large additional reserves will be found. But this is also true, that these great reserves will not last long if a major part of the fuel demand of the United States is centered upon them.

What is the remedy? Not regulation of end use, of that I am convinced. Down that road, in my opinion, lie confusion, regimentation and stagnation. I hold in high respect the ability of government servants, particularly that of my friends in the Federal Power Commission, but I can not conceive of a government agency wise enough to say, with justice and the requisite foresight, who shall use how much gas for what. Experience and common sense tell me that

such things should be determined in the market place, not the council chamber; by the free play of competitive forces, not by the fiat of any official but finite man or men.

The remedy lies rather, as I view it, in a proper price relationship, a price relationship such that coal, the plentiful fuel, will carry its proper share of the national fuel load.

What factors, historically, have influenced the price of gas?

One chief factor has been that gas production until recently, and even yet to some extent, has been the stepchild of the oil business, only half-welcomed into the family. Lack of adequate market and to some extent lack of prophetic vision as to its ultimate value have led to its sale on a by-product basis. The result has been long-term contracts at low prices.

Reserves Committed

In areas reached by long-distance gas lines, that day is rapidly passing. The great known reserves of dry gas, not produced with oil, are pretty well dedicated to lines already existing or in immediate prospect. New lines, in the main, have to seek most of their gas from fields in which the gas is associated with oil or condensate. The oil companies have come alive to the value of such gas. They are not selling it for a song; they want a song book if not a symphony. In the Gulf Coast region where Tennessee, only three or four years ago, was blessed for paying five cents per Mcf, Texas Eastern and Memphis are cursed with trying to get contract of decent length at six to eight cents. Natural gas companies are having to accustom themselves to paying higher prices for new supplies.

The other big factor affecting the price of gas to the consumer is rate regulation. The prices at which coal and oil are produced, processed and marketed are determined by competition. In the whole sequence from pit face or reservoir sand to the consumer's bin or tank the only regulated factor is land transportation. Water transportation, an important factor especially in oil, is not regulated. In contrast, both the interstate transportation and the distribution of natural gas are subject to rate regulation. Thus, except as to certain forms of transportation, the price

of coal or oil to the consumer is unregulated, and for all practical purposes is fixed by the law of supply and demand. The price of gas is regulated from the end of the gathering line to the burner.

I am not decrying this regulation of the cost of gas to the consumer. Experience has proved that state regulation of public utility rates is both necessary and workable. The chance that the Federal Government will surrender control over interstate gas lines is too remote to discuss. The business of transporting and distributing natural gas gets paid for its subjection to rate regulation; it gets a measure of protection in the markets that it serves. Within certain limits and with certain exceptions, it gets monopoly in exchange for regulation. I do not argue against either the inevitability or the wisdom of the rate regulation to which the price of gas is now subjected.

What I do contend is that, unless gas is going to be called upon to carry an undue share of the fuel load, there must be an area within which the law of supply and demand can operate, an area where the price is fixed by competitive value and not by regulation.

That area—the only remaining area—is in the producing field. It seems to me imperative, if we are not to use up our natural gas reserves while equivalent heat units of coal and oil go unused, that the production and gathering of gas, and the price paid therefor, be as free from regulation as the production and gathering and price of coal and oil; that competition, and competition alone, be allowed to determine the price of gas at the point of delivery for interstate shipment.

Still other forces are bearing upon the field price of gas. One of the most important is the increasing pressure for gas conservation by the state conservation commissions, and their recognition of price as the most potent conservation agent.

No one is likely to save, gather and deliver gas for less than it costs him to save, gather and deliver it. He is in business to make a profit, and if he fails to make a profit he will soon be out of business. Unless he can make a profit on selling his gas he will waste it. Few operators on the other hand will waste gas if they can sell it at a profit. A difference of half a cent per thousand cubic feet may determine whether gas is

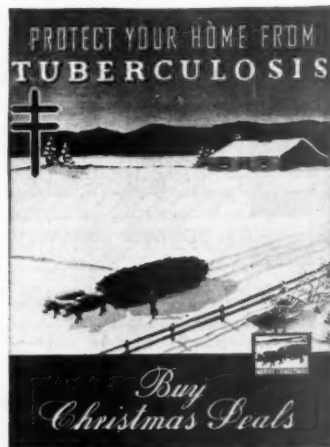
burned in a flare in Texas or in a gas furnace in Ohio.

The gas furnace and also the gas flare, moreover, have a competitor coming up: the plant for converting natural gas into liquid fuels. People who want natural gas for cooking or heating or industrial uses are going to have to pay a high enough price, within a few years, to keep the gas they want from becoming gasoline.

We must not forget, however, that competition is not a one-way street. Prices can travel it in either direction, and gas prices may not do all the traveling. When coal and coal cars are again in abundant supply, the coal industry is not likely to lie asleep under a lamp post while gas runs away with its markets.

Knowing the oil business, I can assure you that when heating oil is again plentiful, if that day ever comes again, gas men will have to fight for every customer they get or keep. The reason I do not say more about a competitive price relationship between oil and gas is a simple one; the day when heating oil will again be in abundant supply appears more remote and perhaps more problematical. Until that day comes the basic competition with gas must come from coal.

The important thing if coal is not to lie in the ground unmined while gas carries more of the fuel load than it should, is not how much gas prices go up or how much coal prices come down, but that the two compete to a proper price relationship. We must be sure to keep an area within which the price of gas, like that of coal, is regulated solely by the law of supply and demand.



PAR COMMITTEE

(Continued from page 530)

"Gas Has Got It" drive which has confounded our competitors and awakened the interest of the country from coast to coast. This drive, which is currently at its peak, utilizes mass "shock" tactic advertising and coordination of all elements of the industry on a scale never before attained, to drive home the story that automatic gas ranges have all the features most desired by American women.

A total of more than 4 million dollars will be spent during the year by the Association, manufacturers, dealers and their allies in support of this spectacular campaign. Special incentive features have stimulated greater tie-in support for the Association's national advertising than any other single activity to date. As a matter of fact, range manufacturers participating in the drive have increased their advertising volume three-fold over the immediate past.

Prior to the current coordinated campaign, the PAR plan in its first three years of operation was responsible for increasing A. G. A. national gas advertising expenditures by \$353,000 a year or a total of more than one million dollars—an increase of 88 percent above the year before the plan was initiated. Current rate of A. G. A. national advertising is \$800,000 per year; thus making it possible for hard-hitting gas copy to reach a wider audience than ever before.

Continuing promotional efforts which have been initiated or supported by the PAR plan include the highly successful New Freedom Gas Kitchen Program, the Commercial Cooking Program, and the preparation of a great deal of material for distribution in schools. Principal objective of the New Freedom drive has been the encouragement of gas companies to set up kitchen planning bureaus and activities on behalf of their customers and to convince the public through national advertising that modern gas kitchens provide a superior service to that of any competitors. Approximately 300,000 New Freedom Gas Kitchen booklets were distributed to the public in furtherance of this program.

The Commercial Cooking Program was organized under the PAR plan to increase existing commercial gas cooking loads and to develop new ones. It includes direct personal contact with

large commercial customers, trade associations, manufacturers and volume cooking institutions and the preparation of sales pieces.

A monumental work was completion of the "Manual of Modern Gas Service," a comprehensive and highly effective loose-leaf book which has been distributed nationally to architects and builders. Other promotional tools of importance which have brought increased prestige and attention to the industry include consumer laundry and range booklets, a picture storybook "History of Gas," and a teachers' manual on the care and use of the modern automatic gas range.

The PAR plan is also responsible for the production and distribution of an outstanding color sound motion picture on automatic ranges entitled "Winning Seals of Approval." It has made possible industry participation in 17 national shows and contact work with the motion picture industry to insure an adequate appearance of gas appliances in Hollywood motion pictures. Add to this the introduction of a colorful new character, "Miss Flame," who will grace much future gas promotional copy, the conduct of competitive cooking tests, preparation of automatic water heater material, and a variety of other sales tools, and some idea of the scope of the program can be grasped.

One phase of the PAR plan not mentioned heretofore is the creation of a full-fledged publicity bureau at A. G. A. headquarters. As a result, a negligible amount of publicity on a hit-or-miss basis has been converted into a steady stream of material reaching vital opinion-forming audiences.

Backing up the promotion and advertising phases of the PAR plan is a large-scale long-range research program which already has made important contributions to the industry's progress. More than 62 separate and continuing projects ranging through the entire field of gas production and distribution to end use in new and improved appliances and heating processes are included in this program. Under the direction of gas industry committees and technical advisory groups, these projects are being diligently pursued in the A. G. A. Testing Laboratories, Institute of Gas Technology and 11 other scientific and educational institutions—each chosen for

its special personnel, equipment, and other facilities.

As an entirely new field of endeavor much attention has been focussed on the gas production research program which is designed to improve present gas-making methods and develop new processes. Already this work has resulted in increasing the production capacity of conventional-type equipment.

Two outstanding projects to date are the catalytic reforming of hydrocarbon gases and work on the production of high B.t.u. oil gas. Initiated in the laboratory, the catalytic reforming process has been carried through the pilot plant stage at Chester, Pa., and butane and lighter hydrocarbons have been successfully used. A commercial unit is now being installed by one of the A. G. A. member gas companies and continued work in the laboratory and with the pilot unit on hydrocarbons heavier than butane is projected for the next year.

Heavy Oil Tests

The practicability of producing high B.t.u. gas from heavy oils by a new process is now being tested at Baltimore. It shows promise of substantial economies in the continuous production of high B.t.u. gas or the provision for large peak requirements.

An important activity has been an investigation of pulverization and fluidization techniques for the gasification of fluid and solid fuels requiring the use of temperatures much higher than those used in the petroleum industry. The success of this research may lead to the gasification of solid fuels to produce blue gas or synthesis gas; or to the gasification of heavy oils to produce high B.t.u. gases; or to the gasification of heavy oils or lighter hydrocarbons to produce either a gas of high calorific value or a 530 B.t.u. gas.

Other major gas production projects include investigation of the water gas reaction, work on oil and coal gasification projects, studies of mixed gas burning characteristics and a water gas tar investigation. These projects are all interrelated and any one may ultimately affect the course of the entire industry.

The domestic gas research program is one of the most important channels of the PAR plan and this activity has been increased ten-fold over previous Association-sponsored programs. Under this

program, 26 projects are helping to make the magic blue gas flame burn clearer, brighter and more efficiently for industry and the public.

Projects cover a wide variety of fields, such as automatic ignition, combustion, top-of-range, oven and broiler performance, corrosion of gas appliances, and heat transfer in gas furnaces. Intensive studies are being carried on in the problems of venting, particularly where no chimney flues are available. Kitchen ventilation and the control of humidity in the small newer-type houses are being intensely investigated.

New concepts of gas burners and advanced types of automatic pilots are also being developed in this quest for improved domestic gas appliances. The problem of properly distributing air throughout houses in all seasons of the year, a by-product of the development of all-year gas air conditioning, is the core of another project. Many other basic gas utilization problems are being subjected to a scientific barrage in this program which has many practical applications for the homes of today and tomorrow.

The industrial and commercial research phase of the PAR plan has followed a dual course. First, thorough investigations are being conducted to improve the technique of heat application, control and venting of commercial appliances and industrial applications. Second, exploratory work is being carried on to develop new industrial heating processes and new types of commercial appliances, such as the application of forced combustion to heavy-duty cooking and baking equipment.

Results of this research in the range, water heater, house heating, air-conditioning, industrial and commercial fields have been continuously reported in bulletins and conferences and represent an invaluable work which has received the unquestioned approval of the entire industry. A recent inquiry among range manufacturers, for example, indicates that in practically every case research data provided by the A. G. A. program is already being used in present models and will be more fully utilized in future ones.

In addition to all of these projects, general technical research is being successfully conducted, particularly in the natural gas field. Several projects are

carried on in cooperation with the Bureau of Mines, such as the gas well delivery studies, seeking to learn as much as possible about the physical properties of gas condensate fluids, and the controlling and gauging of combination wells. A study of hydrate formation in pipe lines is already completed and is now being printed.

There are many other projects, both

research and promotional, which are currently a part of the PAR plan but it would take a book to describe them. Enough have been outlined to make it readily apparent that the gas industry is not standing still but, through cooperative efforts, is making unprecedented strides. In short, we have scored and are continuing to score with the PAR program.

Personnel Service

SERVICES OFFERED

Assistant Chief Engineer, Graduate, Seventeen years' experience; 70,000 meters; design, construction of transmission lines, compressor stations. Extensive knowledge natural, mixed gas production, storage, measurement, distribution, corrosion problems. Qualified for management or engineering department head. Well known throughout industry. Good record with labor. Employed at present but considering change. (40). 1554.

Recently graduated as a chemical engineer. Served in the Navy having service training and experience in electronics. Would like a position involving process development or unit operations. No preference as to section of the country. 1555.

Graduate Chemical Engineer—22 years Gas Industry experience. W. G. plant operation, State Utility Commission engineer, budget estimating—gas sales and requirements, marketing load studies, gas utilization and meter testing research, space heating as hobby. Qualified for administrative or managerial position. 5 years in Army with administrative duties. Prefer Midwest. 1557.

Engineer, Supervisor—Graduate engineer with long and well-rounded supervisory experience in the gas industry. Design of production and handling plants, gas surveys, studies, etc. Supervision of coal and water gas production plants. Distribution operation and construction. Appraisals and property records of plants and distribution. 1558.

Manager-Engineer—Broad training and experience in the operation of carburetted water gas properties, with both high and low pressure distribution. Experience also includes sales and commercial activities. College graduate with technical degree. 1559.

Chemical Engineer—June 1947 graduate; former 3rd Assistant, steam and diesel, Marine Engineer, seeks an opportunity. Good grounding in fuels and thermodynamics. Prefer Eastern or Chicago areas. 1560.

Operating Engineer thoroughly familiar with all phases of Water Gas, Oil Gas and Butane-air production and distribution. Technical education (Graduate Engineer) and 27 years unusually broad experience. 1561.

A man 39 whose proven past record in the sale of Gas Appliances and General Management can be valuable to your organization. Has had a thorough training in the Gas Utility Field. Management experience in Coal and Water Gas Utility, also Propane Air Operation. Married; employed; can furnish best of references. 1562.

Accountant, office manager, tax accountant or budget controller with 23 years of experience

in the public utility field. 14 years with a natural gas utility and 9 years with an electric utility. Will go anywhere. Available immediately; married. (43) 1563.

Accountant—Diversified experience, with public accounting, public utility and manufacturing concerns and Government service, in accounting, auditing, preparation of financial, statistical and tax reports, organization and management work desires position. 1564.

Sales Manager wishes to make change due to illness in the family. More than 20 years' experience in Natural, Manufactured and L.P. gases. Have organized both large and small sales forces. National recognition in meeting electric competition and creating dealer cooperation. Also directed public relations program. 1565.

Chief Engineer. Extensive metal fabrication and home appliance background including water heaters. Accustomed to full responsibility in large scale operations. Have handled all product, plant, and industrial engineering. Capable administrator and strongly cost minded. Only interested in top flight job with progressive company. 1566.

POSITIONS OPEN

Chief Engineer for modern Southern stove plant manufacturing gas ranges, oil ranges and heater. Must have thorough knowledge of sheet metal working equipment, tool and die design, cost estimating and purchase of tools, dies and fixtures. Excellent opportunity for permanent employment. State qualifications. (This information will be confidential and no request for references will be made without your full consent.) 0509.

Service Manager—experienced in handling installation and service work and personnel—accept full responsibility of department and its efficient operation. Our personnel have been informed of this advertisement. Write, giving experience and other details. 0510.

Gas Plant Superintendent required to work in Central America in gas plant manufacturing approximately 1,000,000 cu. ft. gas per day. Man engaged for this position would have to take full responsibility of operation and maintenance of gas plant and distribution system. Salary open. Reply by letter, stating education, experience, age, and salary desired. 0511.

Working-manager for small Propane-Air gas property in Pennsylvania with fringe bottled gas territory. Ability to sell important. Write giving experience in detail and salary expected. 0512.

Gas Utilization Engineer: Experienced in promotional work with commercial and industrial customers. Excellent opportunity with well established utility located in the South which now distributes manufactured gas and has expectations of natural gas. 0513.

Chemical or Gas Engineers, with gas plant operating experience or pilot plant experience, are wanted for development work on the pilot plant scale production of synthesis gas from coal by a new process. Unusual opportunity to get on the ground floor in a new line of manufacture promising considerable future. Location in East. High earnings for qualified men. Five weeks' paid vacation per year. State minimum salary. Submit complete personal data and references. 0514.

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